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UNITED STATES DEPARTMENT OF AGRICULTURE

MISCELLANEOUS PUBLICATION No. 128

L. M.

LIST OF BULLETINS OF THE
AGRICULTURAL EXPERIMENT STATIONS
FOR THE CALENDAR YEARS
1929 AND 1930

By

CATHERINE E. PENNINGTON, Junior Librarian
Office of Experiment Stations



WASHINGTON, D. C., JANUARY, 1932

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LIST OF BULLETINS OF THE AGRICULTURAL EXPERIMENT STATIONS FOR THE CALENDAR YEARS 1929 AND 1930¹

By CATHERINE E. PENNINGTON, *Junior Librarian, Office of Experiment Stations*

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157. The sheep stomach worm. G. H. Lamson, jr., and A. F. Schulze. Sept., 1929.

158. Studies on infectious mastitis with special reference to streptococci, first report. G. D. Brigham, J. G. McAlpine, and E. O. Anderson. Sept., 1929.

159. Corn silage feeding investigations: Fifth paper, Relative feeding values of the dry matter of different types of silage corn ensiled at different stages of maturity. G. C. White and R. E. Johnson. Sept., 1929.

160. The causes of degeneration of Irish potatoes in Connecticut. B. A. Brown. Oct., 1929.

161. The genesis to farming occupations in Connecticut. J. L. Hypes and J. F. Markey. Oct., 1929.

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165. An economic study of the agriculture of the Connecticut Valley: 3, Tobacco farm organization. C. I. Hendrickson. Sept., 1930.

166. Taxation in Connecticut, a preliminary survey with emphasis upon its relation to agriculture. M. S. Kendrick. Sept., 1930.

167. Corn silage feeding investigations: Seventh paper, Variations in hay consumption of dairy cattle with corn silages of different dry matter content. G. C. White, R. E. Johnson, and R. G. Connally. Oct., 1930.

168. Dedication of Atwater laboratory, June 12, 1930. W. L. Slate [and others]. Nov., 1930.

169. Corn silage feeding investigations: Eighth paper, Optimum amount of silage in the dairy ration for economical production. G. C. White and A. D. Pratt. Nov., 1930.

170. The cost of cooling milk with electricity. E. O. Anderson. Nov., 1930.

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161. The marketing of Delaware sweet potatoes. H. S. Gabriel. Sept., 1929.

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163. Studies on the control of Bang's abortion disease of cattle. C. C. Palmer. Nov., 1929.

164. Pasture improvement. G. L. Schuster. June, 1930.

165. The marketing of Delaware cantaloupes, Part I. H. S. Gabriel. June, 1930.

166. (Technical bulletin 11.) The mechanism of buffer action in soils. P. B. Myers and G. M. Gilligan. Oct., 1930.

167. Annual report of the director for the fiscal year ending June 30, 1930. C. A. McCue [and others]. Nov., 1930.

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203. (Technical bulletin.) A contribution to the biology and control of the green citrus aphid, *Aphis spiraecola* Patch. R. L. Miller. Apr., 1929.

204. Strawberries in Florida, culture, diseases and insects. A. N. Brooks, J. R. Watson, and Harold Mowry. May, 1929.

205. The Japanese persimmon in Florida. A. F. Camp and Harold Mowry. June, 1929.

206. (Technical bulletin.) Manson's eyeworm of poultry. D. A. Sanders. June, 1929.

207. (Technical bulletin.) Angular leaf spot and fruit rot of cucumbers, caused by *Bacterium lachrymans* E. F. S. & Bry. G. F. Weber. Oct., 1929.

208. Cucumber diseases in Florida. G. F. Weber. Nov., 1929. Revision of Bul. 177.

209. Lawns in Florida. C. R. Enlow and W. E. Stokes. Dec., 1929.

210. Corn diseases in Florida. A. H. Eddins. Jan., 1930.

211. A study of the root systems of some important sod-forming grasses. A. S. Laird. Feb., 1930.

212. Diseases of sweet potatoes in Florida. G. F. Weber and Erdman West. Mar., 1930.

213. (Technical bulletin.) Potash in relation to cotton wilt. M. N. Walker. Apr., 1930.

214. Cotton diseases in Florida. M. N. Walker. May, 1930.

215. (Technical bulletin.) Effects of irrigation with sewage effluent on the yields and establishment of Napier grass and Japanese cane. W. E. Stokes, W. A. Leukel, and R. M. Barnette. May, 1930.

216. A nutritional study of the white school children in five representative counties of Florida. C. F. Ahmann, O. D. Abbott, and Georgia Westover. June, 1930.

217. A study of the cost of transportation of Florida citrus fruits with comparative costs from other producing areas. M. A. Brooker. June, 1930.

218. Fertilizer experiments with truck crops: I, Celery and lettuce on Leon fine sand; II, tomatoes on calcareous glade soil; III, truck crops with manganese on calcareous glade soil. J. J. Skinner and R. W. Ruprecht. July, 1930.

219. (Technical bulletin.) Growth behavior and maintenance of organic foods in Bahia grass. W. A. Leukel and J. M. Coleman. Aug., 1930.

220. (Technical bulletin.) Effect of seed-potato treatment on yield and Rhizoctonosis in Florida from 1924 to 1929. L. O. Gratz. Sept., 1930.

221. The tung-oil tree. Wilmon Newell, Harold Mowry, and R. M. Barnette. Oct., 1930.

222. (Technical bulletin.) Potato spraying and dusting experiments in Florida, 1924 to 1929. L. O. Gratz. Nov., 1930.

GEORGIA AGRICULTURAL EXPERIMENT STATION, EXPERIMENT

BULLETINS

150. Pimiento peppers. J. G. Woodroof and J. E. Bailey. Feb., 1929.

151. Fertilizer ratio experiments, conducted on Cecil sandy clay loam; cotton, corn and wheat grown in rotation. R. P. Bledsoe and J. J. Skinner. Jan., 1929.

152. Cotton fertilizers and cultural methods. R. P. Bledsoe. Apr., 1929.

153. Credit problems of Georgia cotton farmers. A. N. Moore, J. K. Giles, and R. C. Campbell. June, 1929.

154. Composting barnyard manure with sulphur and rock phosphate. W. G. Friedemann. July, 1929.

155. Marketing Georgia peaches. R. M. Middleton. May, 1929.

156. High points in work of Georgia experiment station, commemorating the opening of the Flynt Building. C. A. Whittle. June, 1929.

157. Quality of cotton grown in Georgia. W. T. Fullilove and W. B. Lanham. Sept., 1929.

158. Cotton fiber studies. R. C. Campbell. June, 1929.

159. Food habits of Georgia rural people. S. J. Mathews. May, 1929.

160. Some effects of pimiento pepper on poultry. W. L. Brown. June, 1930.

161. "Halo spot" of beans and kudzu. B. B. Higgins. June, 1930.

162. A pepper fruit rot new to the United States. B. B. Higgins. Aug., 1930.

163. Preserving fruits by freezing: I, Peaches. J. G. Woodroof. Aug., 1930.

164. Preserving fruits by freezing: II, Figs. J. G. Woodroof and J. E. Bailey. Oct., 1930.

165. Farm prices of cotton related to quality, Georgia crop, 1928-29. L. D. Howell and W. T. Fullilove. Sept., 1930.

HAWAII AGRICULTURAL EXPERIMENT STATION, HONOLULU

BULLETINS

58. Mango culture in Hawaii. W. T. Pope. Oct., 1929.
59. The Macadamia nut in Hawaii. W. T. Pope. Nov., 1929.
60. Utilization and composition of oriental vegetables in Hawaii. H. L. Chung and J. C. Ripperton. Dec., 1929.
61. Papaya culture in Hawaii. W. T. Pope. Oct., 1930.

IDAHO AGRICULTURAL EXPERIMENT STATION, MOSCOW

BULLETINS

163. Dairy herd improvement through the use of proved bulls. F. W. Atkeson, H. A. Mathiesen, and D. L. Fourt. May, 1929.
164. Work and progress of the agricultural experiment station for the year ending December 31, 1928. E. J. Iddings. June, 1929.
165. Food consumption and food expenditures in relation to standards of requirements and family income. M. W. Talbott. July, 1929.
166. Factors relating to the price of Idaho potatoes. R. B. Heflebower. June, 1929.
167. Progress report of prune storage and maturity studies. C. C. Vincent, Leif Verner, and E. C. Blodgett. Aug., 1929.
168. The control of fowl pox in poultry. E. M. Gildow, G. S. Schilling, Pren Moore, and C. E. Lampman. Dec., 1929.
169. Alfalfa on the cut-over lands of northern Idaho. J. H. Christ. Mar., 1930.
170. Work and progress of the agricultural experiment stations for the year ending December 31, 1929. E. J. Iddings. Apr., 1930.
171. The cherry industry in the Lewiston orchards with cultural recommendations. E. C. Blodgett. June, 1930.
172. Steer prices in relation to Idaho beef producers' problems. R. B. Heflebower. Aug., 1930.
173. Farming systems for eastern Washington and northern Idaho. George Severance, Byron Hunter, and Paul Eke. July, 1930. Also published as Washington Sta. Bul. 244.
174. Standardization of milk with skimmilk powder for the manufacture of cheddar cheese. H. C. Hansen and D. R. Theophilus. Aug., 1930.
175. Bulk handling grain from the hillside type combine. Hobart Beresford and E. N. Humphrey. Oct., 1930.

RESEARCH BULLETINS

7. Symptomatology, transmission, infection and control of bean mosaic in Idaho. W. H. Pierce and C. W. Hungerford. June, 1929.
8. Apple breeding in Idaho. C. C. Vincent and L. E. Longly. Nov., 1930.

ILLINOIS AGRICULTURAL EXPERIMENT STATION, URBANA

BULLETINS

319. Fertilizer experiments with truck crops in southern Illinois. J. W. Lloyd. Feb., 1929.
320. Inheritance of kernel arrangement in sweet corn. W. A. Huelsen and M. C. Gillis. Feb., 1929.
321. Swine type studies: I, Type in swine as related to rate and economy of gain. W. E. Carroll, Sleeter Bull, J. B. Rice, R. J. Laible, and R. A. Smith. May, 1929.
322. Swine type studies: II, Type in swine as related to quality of pork. Sleeter Bull and J. H. Longwell. May, 1929.
323. Swine type studies: III, The energy and protein requirements of growing swine and the utilization of feed energy in growth. H. H. Mitchell and T. S. Hamilton. May, 1929.
324. Seasonal features of Illinois grain marketing. L. J. Norton and C. L. Stewart. May, 1929.
325. Studies of the composition of milk. O. R. Overman, F. P. Sanmann, and K. E. Wright. May, 1929.
326. Developmental study of a rural-urban trade area. H. W. Mumford, C. L. Stewart, H. C. M. Case, and P. E. Johnston. May, 1929.
327. Crop yields from Illinois soil experiment fields in 1928. F. C. Bauer. May, 1929.

328. Summer rations for fattening steers. R. R. Snapp and J. H. Knox. June, 1929.

329. Organizing the corn-belt farm for profitable production, based on studies of farms in east-central Illinois. H. C. M. Case, R. H. Wilcox, and H. A. Berg. June, 1929.

330. Relative economy of the various cuts of pork. Sleeter Bull and J. H. Longwell. June, 1929.

331. Practices and problems of cooperative livestock shipping associations in Illinois. R. C. Ashby. June, 1929.

332. Electric power for the farm. E. W. Lehmann and F. C. Kingsley. June, 1929.

333. Enzyme activity of ice-cream improvers. P. H. Tracy and H. A. Ruehe. June, 1929.

334. Observations on the refrigeration of some Illinois fruits in transit. J. W. Lloyd and H. M. Newell. June, 1929.

335. Illini soybeans. C. M. Woodworth. Aug., 1929.

336. Quality in celery as related to structure. C. B. Sayre. Aug., 1929.

337. A field test for available phosphorus in soils. R. H. Bray. Aug., 1929.

338. Some comparisons of methods of fattening western lambs. W. G. Kammlade. Oct., 1929.

339. Varieties of oats for Illinois. G. H. Dungan and W. L. Burlison. Dec., 1929.

340. Experiments with blister canker of apple trees. H. W. Anderson. Jan., 1930.

341. A comparison of the transpiration rates of twenty-one deciduous fruit species. V. W. Kelley. Feb., 1930.

342. Livestock truckage rates in Illinois, with a comparison of marketing expense by truck and by rail. R. C. Ashby. Feb., 1930.

343. Studies on porcine infectious abortion. Robert Graham, I. B. Boughton, and E. A. Tunnicliff. Mar., 1930.

344. Growing potatoes in Illinois. J. J. Pieper, W. L. Burlison, and W. P. Flint. Apr., 1930.

345. Use of honey in ice-cream manufacture. P. H. Tracy, H. A. Ruehe, and F. P. Sanmann. May, 1930.

346. Fertilizing twenty-five kinds of vegetables. J. W. Lloyd and L. H. Strubinger. June, 1930.

347. Crop yields from Illinois experiment fields in 1929, together with a general summary for the rotation periods ending in 1929. F. C. Bauer. June, 1930.

348. Effect of certain hydrocarbon oils on respiration of foliage and dormant twigs of the apple. V. W. Kelley. June, 1930.

349. Growing alfalfa in Illinois. W. L. Burlison, O. H. Sears, and J. C. Hackleman. June, 1930.

350. Some factors influencing the keeping quality of fruit in transit. J. W. Lloyd and H. M. Newell. June, 1930.

351. Prices of Illinois farm products from 1866 to 1929. L. J. Norton and B. B. Wilson. July, 1930.

352. Factors affecting the heat coagulation of homogenized coffee cream. P. H. Tracy and H. A. Ruehe. [1930.]

353. Effect of certain hydrocarbon oils on the transpiration rate of some deciduous tree fruits. V. W. Kelley. Aug., 1930.

354. Corn diseases in Illinois, their extent, nature, and control. Benjamin Koehler and J. R. Holbert. Sept., 1930.

355. Effects of sex, length of feeding period, and a ration of ear-corn silage on the quality of baby beef. Sleeter Bull, F. C. Olson, and J. H. Longwell. Sept., 1930. Also abstract edition.

356. Inheritance in lettuce. C. E. Durst. Oct., 1930.

357. Experiments in forcing gladioli. F. F. Weinard and S. W. Decker. Oct., 1930.

358. Summer-budded versus winter-grafted roses. F. F. Weinard and S. W. Decker. Oct., 1930.

359. New protection against stored-grain insects. W. P. Flint and C. O. Mohr. Nov., 1930.

360. A nonacid Babcock method for determining fat in ice cream. O. R. Overman and O. F. Garrett. Dec., 1930.

361. Breeding two new varieties of greenhouse tomatoes resistant to Fusarium wilt. W. A. Huelsen and M. C. Gillis. Dec., 1930.

362. Response of Illinois soils to systems of soil treatment. F. C. Bauer. Dec., 1930.

363. Prices of Illinois farm products from 1921 to 1929. L. J. Norton. Dec., 1930.

SOIL REPORTS

42. Morgan County soils. R. S. Smith, E. E. DeTurk, F. C. Bauer, and L. H. Smith. Feb., 1929.

43. Douglas County soils. R. S. Smith, E. E. DeTurk, F. C. Bauer, and L. H. Smith. July, 1929.

44. Coles County soils. R. S. Smith, E. E. DeTurk, F. C. Bauer, and L. H. Smith. Aug., 1929.
45. Macon County soils. R. S. Smith, E. A. Norton, E. E. DeTurk, F. C. Bauer, and L. H. Smith. Dec., 1929.
46. Edwards County soils. E. A. Norton, R. S. Smith, E. E. DeTurk, F. C. Bauer, and L. H. Smith. July, 1930.
47. Piatt County soils. R. S. Smith, E. E. DeTurk, F. C. Bauer, and L. H. Smith. Dec., 1930.

INDIANA AGRICULTURAL EXPERIMENT STATION, LAFAYETTE

BULLETINS

328. Buying tomatoes on grade, 1928. F. C. Gaylord and H. M. Cleaver. Feb., 1929.
329. Comparison of soil liming materials. A. T. Wiancko, G. P. Walker, and S. D. Conner. Jan., 1929.
330. Cattle feeding: Winter steer feeding, 1925-26, 1926-27, 1927-28. J. H. Skinner and F. G. King. Jan., 1929.
331. The greenhouse centipede. H. K. Riley. Mar., 1929.
332. Relation of farm power and farm organization in central Indiana. O. G. Lloyd and L. G. Hobson. June, 1929.
333. Sheep feeding: XXIII [i. e. XVII], Fattening western lambs, 1928. Claude Harper. Nov., 1929.
334. The marketing of eggs on a graded basis. E. R. Menefee. Nov., 1929.
335. Marketing Indiana timber. W. L. Neubrech. Jan., 1930.
336. Buying tomatoes on grade, 1929. F. C. Gaylord and J. H. MacGillivray. Feb., 1930.
337. Motor transportation of hogs to the Indianapolis market. J. R. Wiley. Mar., 1930.
338. The two-litter hog system on Indiana farms. G. E. Young. May, 1930.
339. Fuels used for cooking purposes in Indiana rural homes. Miriam Rapp. May, 1930.
340. The influence of the growth and fattening processes on the quantity and quality of meat yielded by swine. E. L. Scott. June, 1930.
341. Soybeans as a substitute for tankage in fattening spring pigs on legume pasture. C. M. Vestal. June, 1930.
342. Types of farming in Indiana. E. C. Young and F. F. Elliott. June, 1930.
343. Sheep feeding: Fattening western lambs (type test), 1925-26, 1926-27, 1927-28, 1928-29. Claude Harper. Aug., 1930.
344. Lamb production: I, Producing native lambs, the value of pasture, 1927-1928-1929. Claude Harper. Sept., 1930.

IOWA AGRICULTURAL EXPERIMENT STATION, AMES

BULLETINS

256. Types of farming in Iowa. C. L. Holmes. Jan., 1929.
257. Relation of certain ear and kernel characters of Reid Yellow Dent corn to yield. H. D. Hughes and J. L. Robinson. Jan., 1929.
258. A simple linebreeding program for poultry breeders. C. W. Knox. Apr., 1929.
259. The corn enterprise in Iowa. E. B. Hurd. Apr., 1929.
260. Life, service and cost of service of farm machinery. J. B. Davidson. June, 1929.
261. The crop system in Iowa County. J. A. Hopkins, jr. June, 1929.
262. The inoculation of non-legumes. L. W. Erdman and P. E. Brown. June, 1929. Also abridged edition.
263. Species and varietal crosses in cucurbits. A. T. Erwin and E. S. Haber. June, 1929.
264. Horses, tractors, and farm equipment. J. A. Hopkins, jr. June, 1929.
265. High yielding strains and varieties of corn for Iowa. H. D. Hughes, J. L. Robinson, and A. A. Bryan. July, 1929. Also abridged edition.
266. The management of peat and alkali soils in Iowa. W. H. Stevenson, P. E. Brown, and J. L. Boatman. Jan., 1930.
267. Creamery organization and construction. Henry Giese and Martin Mortensen. Feb., 1930.
268. Cropping systems in Iowa, past and present. E. B. Hurd. Apr., 1930.
269. Field experiments with fertilizers on some Iowa soils. W. H. Stevenson, P. E. Brown, L. W. Forman, H. R. Meldrum, A. J. Englehorn, and R. E. Bennett. May, 1930.
270. The livestock system in Iowa County. J. A. Hopkins, jr., and R. S. Kifer. June, 1930.

271. Relative efficiency of calves, yearlings and two-year-old steers for the producer. C. C. Culbertson, J. M. Evvard, and W. E. Hammond. June, 1930. Also abridged edition.

272. Influence of the animal's age upon the quality and palatability of beef: Part I, Carcass yields and quality of meat cuts. M. D. Helser.— Part II, The roast beef, preparation, quality, and palatability. P. M. Nelson, Belle Lowe, and M. D. Helser. June, 1930.

273. Soft ear corn silage for swine. J. M. Evvard, C. C. Culbertson, Q. W. Wallace, and E. J. Maynard. June, 1930. Also abridged edition.

274. Harvesting cornstalks for industrial uses. J. B. Davidson and E. V. Collins. Nov., 1930.

275. The population of Iowa, its composition and changes, a brief sociological study of Iowa's human assets. W. L. Harter and R. E. Stewart. Nov., 1930.

RESEARCH BULLETINS

117. Bacteriological studies on sulfid spoilage of canned vegetables. C. H. Werkman. May, 1929.

118. A new feeding method and standards for fattening young swine. J. M. Evvard. June, 1929.

119. Factors influencing egg production: I, The influence of maturity upon egg production in S. C. White Leghorns. C. W. Knox. Jan., 1930.

120. The vitamin B content of vegetables. M. C. House, P. M. Nelson, and E. S. Haber. Feb., 1930.

121. The inheritance of germless seeds in maize. J. B. Wentz. Feb., 1930.

122. International trade in pork and pork products. Knute Bjorka. Feb., 1930.

123. Proteolysis by *Streptococcus lactis* with special reference to butter cultures and butter. B. W. Hammer and V. H. Patil. Mar., 1930.

124. Infection studies of *Diptodia zae* (Schw.) Lev. and control of seedling blights of corn. W. P. Raleigh. Apr., 1930.

125. The biology of the four-lined borer *Luperina stipata* (Morr.). G. C. Decker. May, 1930.

126. The production of artificial farm manures. F. B. Smith, W. H. Stevenson, and P. E. Brown. June, 1930.

127. The effects of artificial farm manures on soils and crops. F. B. Smith and P. E. Brown. June, 1930.

128. Factors influencing egg production: II, The influence of the date of first egg upon maturity and egg production. C. W. Knox. June, 1930.

129. Long term loans of Iowa banks. F. L. Garlock. June, 1930.

130. The effect of delayed harvest upon yield of grain. L. C. Burnett and A. L. Bakke. June, 1930.

131. Acidity changes associated with the keeping quality of apples under various storage conditions. H. H. Plagge and Fisk Gerhardt. June, 1930.

132. Microbiological studies of some typical Iowa soil profiles. P. E. Brown and T. H. Benton. June, 1930.

133. The inheritance of color and horns in blue-gray cattle, II. J. M. Evvard, P. S. Shearer, E. W. Lindstrom, and A. D. B. Smith. June, 1930.

134. Bacteriology of butter: I, Influence of the distribution of the non-fatty constituents on the changes in bacterial content during holding. B. W. Hammer and R. V. Hussong. Dec., 1930.

SOIL REPORTS

54. Plymouth County soils. W. H. Stevenson, P. E. Brown, D. S. Gray, L. W. Forman, and H. R. Meldrum. Apr., 1929.

55. Harrison County soils. W. H. Stevenson, P. E. Brown, T. H. Benton, L. W. Forman, and H. R. Meldrum. May, 1929.

56. Delaware County soils. W. H. Stevenson, P. E. Brown, Bryan Boatman, L. W. Forman, H. R. Meldrum, and R. E. Bennett. May, 1929.

57. Jones County soils. W. H. Stevenson, P. E. Brown, A. M. O'Neal, L. W. Forman, H. R. Meldrum, and R. E. Bennett. May, 1929.

58. Fremont County soils. W. H. Stevenson, P. E. Brown, C. L. Orrben, L. W. Forman, and H. R. Meldrum. May, 1929.

59. Cherokee County soils. W. H. Stevenson, P. E. Brown, D. S. Gray, H. R. Meldrum, and L. W. Forman. May, 1929.

60. Carroll County soils. W. H. Stevenson, P. E. Brown, A. M. O'Neal, H. R. Meldrum, and L. W. Forman. Oct., 1930.

61. Howard County soils. W. H. Stevenson, P. E. Brown, C. L. Orrben, L. W. Forman, H. R. Meldrum, and R. E. Bennett. Oct., 1930.
62. Warren County soils. W. H. Stevenson, P. E. Brown, A. M. O'Neal, L. W. Forman, H. R. Meldrum, A. J. Englehorn, and R. E. Bennett. Oct., 1930.
63. Chickasaw County soils. W. H. Stevenson, P. E. Brown, C. L. Orrben, H. R. Meldrum, L. W. Forman, and R. E. Bennett. Oct., 1930.
64. Kossuth County soils. W. H. Stevenson, P. E. Brown, T. H. Benton, D. S. Gray, H. R. Meldrum, L. W. Forman, and R. E. Bennett. Oct., 1930.
65. Clayton County soils. W. H. Stevenson, P. E. Brown, T. H. Benton, H. R. Meldrum, L. W. Forman, and R. E. Bennett. Oct., 1930.

KANSAS AGRICULTURAL EXPERIMENT STATION, MANHATTAN

BULLETINS

247. Poultry diseases, their prevention and control. L. D. Bushnell and C. A. Brandy. June, 1929. Revision of Circ. 106.
248. Wheat production in Kansas. S. C. Salmon and R. I. Throckmorton. July, 1929.
249. Soybean production in Kansas. J. W. Zahnley. Feb., 1930.
250. A report of the Tribune branch agricultural experiment station. T. B. Stinson and H. H. Laude. Mar., 1930.
251. Types of farming in Kansas. J. A. Hodges, F. F. Elliott, and W. E. Grimes. Aug., 1930.
252. Crossbred poultry. D. C. Warren. Dec., 1930.

TECHNICAL BULLETINS

25. Principal poisonous plants in Kansas. F. C. Gates. July, 1930.
26. A study of factors influencing inoculation experiments with Azotobacter. P. L. Gainey. Aug., 1930.

KENTUCKY AGRICULTURAL EXPERIMENT STATION, LEXINGTON

BULLETINS

291. (Research bulletin.) Calcium metabolism in the laying hen: III, Calcium carbonate and hatchability. G. D. Buchner, J. H. Martin, and A. M. Peter. Jan., 1929.
292. Systems of farming for the Purchase region of Kentucky. J. B. Hutson, W. G. Finn, and Z. L. Galloway. Feb., 1929.
293. Leafhopper injury to clover and alfalfa. H. H. Jewett. Mar., 1929.
294. Feeding trials with laying hens: I, Varying amounts of meat scrap; II, dull-gray and white, shiny limestone; III, all-mash and grain and mash. J. H. Martin and W. M. Insko, jr. Apr., 1929.
295. Commercial feeds in Kentucky in 1928. J. D. Turner, H. D. Spears, W. G. Terrell, and L. V. Amburgey. May, 1929.
296. (Research bulletin.) Bacillary white diarrhea and related diseases of chickens. P. R. Edwards and F. E. Hull. Sept., 1929.
297. (Research bulletin.) Potato flea-beetles. H. H. Jewett. Oct., 1929.
298. Analyses of commercial fertilizers. H. E. Curtis, H. R. Allen, and Lelah Gault. Dec., 1929.
299. The Hopkinsville experiment field. George Roberts, J. F. Freeman, and E. J. Kinney. Mar., 1930.
300. Social and economic effects of land speculation on farm families in central Kentucky. Merton Oyler. Mar., 1930.
301. Cost of living and population trends in Laurel County, Kentucky. Merton Oyler. Mar., 1930.
302. Quality as a factor in the price of Kentucky lambs. E. C. Johnson and C. D. Phillips. Apr., 1930.
303. Farm tenancy in central Kentucky. W. D. Nicholls. Apr., 1930.
304. The effect of vitamin D supplements on laying hens. J. H. Martin, S. E. Erikson, and W. M. Insko, jr. Apr., 1930.
305. Farm management and incomes of farm families in Laurel County, Kentucky. W. D. Nicholls and H. W. Hawthorne. May, 1930.
306. Virus diseases of tobacco in Kentucky. E. M. Johnson. June, 1930.
307. Share leasing contracts. W. D. Nicholls. July, 1930.
308. (Research bulletin.) The potassium, chlorine and sulfate content of Kentucky tobacco as related to grade. O. M. Shedd. July, 1930.

309. (Research bulletin.) The relation of some tobacco viruses to potato degeneration. W. D. Valleau and E. M. Johnson. July, 1930.

310. Commercial feeds in Kentucky in 1929. J. D. Turner, H. D. Spears, W. G. Terrell, and L. V. Amburgey. July, 1930.

311. The agricultural credit situation in Kentucky. H. B. Price, C. J. Bradley, and E. C. Johnson. Dec., 1930.

312. The budget method of improving farm organization and management. W. G. Finn and Z. L. Galloway. Dec., 1930.

313. Analyses of commercial fertilizers. H. E. Curtis, H. R. Allen, and Lelah Gault. Dec., 1930.

LOUISIANA AGRICULTURAL EXPERIMENT STATION, BATON ROUGE

BULLETINS

203. Sugar cane test fields and fertilizer demonstrations. C. B. Gouaux. Apr., 1929.

204. Report of the North Louisiana experiment station for the years 1928-1929. Sidney Stewart. Mar., 1930.

205. Report of the Rice experiment station for the years 1928-1929. J. M. Jenkins. Mar., 1930.

206. Report of the Fruit and truck experiment station for the years 1928-1929. Boleslaus Szymoniak. Mar., 1930.

207. Cotton varieties for Louisiana, a preliminary report. H. B. Brown. Feb., 1930.

208. The agricultural credit situation in Louisiana. R. L. Thompson. Jan., 1930.

209. Management of farm woodlands in Louisiana. G. D. Marckworth and Robert Moore. Apr., 1930.

210. Louisiana corn varieties. H. B. Brown. Feb., 1930.

211. Sugarcane variety work at the test fields. C. B. Gouaux. May, 1930.

212. Factors influencing the severity of the root rot troubles of sugar cane. H. H. Flor. May, 1930.

213. Blackberry and muscadine grape culture at Hammond, Louisiana. Boleslaus Szymoniak. May, 1930.

214. Damage by the rice water weevil proved negligible. J. W. Ingram and W. A. Douglas. Aug., 1930.

215. An economic study of factors affecting farm organization and power utilization of sugar cane farms, 1929. G. H. Reuss. Nov., 1930.

216. Rice farm irrigation systems in Louisiana, 1929. R. J. Saville. Nov., 1930.

217. Some economic problems in the rice farming area, 1929. R. J. Saville. Nov., 1930.

218. Tractors and trucks on Louisiana rice farms, 1929, with supplementary data on labor requirements. R. J. Saville and G. H. Reuss. Dec., 1930.

MAINE AGRICULTURAL EXPERIMENT STATION, ORONO

BULLETINS

350. Concentrated fertilizers for potatoes in Aroostook County. B. E. Brown and F. V. Owen. May, 1929.

351. An economic study of 239 blueberry farms in Washington and Hancock Counties. Maine. C. H. Merchant. July, 1929.

352. Potato spraying and dusting experiments 1926 to 1928. Reiner Bonde, Donald Folsom, and E. R. Tobey. Oct., 1929.

353. Abstracts of papers not included in bulletins; finances; meteorology; index. Dec., 1929.

354. Sources of nitrogen for potato fertilizers in Aroostook County. B. E. Brown, F. V. Owen, and E. R. Tobey. Apr., 1930.

355. Local market requirements of agricultural products in Aroostook County, Maine. C. H. Merchant and B. T. Smith. June, 1930.

356. Blueberry and huckleberry insects. C. R. Phipps. Dec., 1930.

357. Abstracts of papers not included in bulletins; finances; meteorology; index. Dec., 1930.

MARYLAND AGRICULTURAL EXPERIMENT STATION, COLLEGE PARK

BULLETINS

304. An economic study of the production of tomatoes in Maryland. W. P. Walker. Mar., 1929.

305. An economic study of the production of sweet corn and peas in Maryland. S. H. DeVault and W. P. Walker. Mar., 1929.

306. Factors influencing yield and quality of peas, biophysical and biochemical studies. V. R. Boswell. Mar., 1929.

307. A study of spinach varieties with special reference to their canning qualities. H. B. Farley. Mar., 1929.

308. Insecticidal value of pyrethrum soaps. E. N. Cory and N. A. Eaton. Apr., 1929.

309. Amounts of fertilizer and manure required for maintenance of fertility for vegetable production. T. H. White and V. R. Boswell. Apr., 1929.

310. A progress report on the testing of sulfonated oxidation products of petroleum for their insecticidal properties. J. L. Hoerner. June, 1929.

311. Fertilizer studies and the production of sweet potatoes. F. W. Geise. July, 1929.

312. Variety studies of spinach. F. W. Geise and H. B. Farley. July, 1929.

313. Studies of premature flower formation in wintered-over cabbage. V. R. Boswell. Aug., 1929.

314. Field and sand culture experiments on fertilizing asparagus. T. H. White and V. R. Boswell. Aug., 1929.

315. The production and marketing of strawberries on the Eastern Shore of Maryland. W. E. Whitehouse, W. J. Hart, and W. P. Walker. Aug., 1929.

316. Ground versus unground soybean hay for dairy cows. L. W. Ingham and DeVoe Meade. Oct., 1929.

317. Tests with potato seed from various sources. R. A. Jehle and E. I. Oswald. Nov., 1929.

318. Cannery tomatoes. results of three years' tests of varieties. F. W. Geise. Dec., 1929.

319. Calf feeding investigations: I, Raising dairy calves on nurse cow, whole milk, remade skim milk and calf meal. L. W. Ingham, DeVoe Meade, and M. H. Berry. Jan., 1930.

320. Spinach for canning, the relation of physical and chemical properties to quality. F. W. Geise. Mar., 1930.

321. Prices paid for Maryland farm products, 1851-1927. R. F. Hale. Sept., 1930.

322. A production and economic survey of the black raspberry industry of Washington County, Maryland. Hugh Ross and E. C. Auchter. Aug., 1930.

323. Maryland grasses. J. B. S. Norton. Sept., 1930.

MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION, AMHERST

BULLETINS

247. Biennial report for the fiscal years ending Nov. 30, 1927 and 1928. F. J. Sievers [and others]. Feb., 1929.

248. Tomato leaf-mold, the use of fungicides for its control in greenhouses. E. F. Guba. Mar., 1929.

249. The plum curculio in apples in Massachusetts. W. D. Whitcomb. Mar., 1929.

250. The consumer demand for apples. L. P. Jefferson. Apr., 1929.

251. Causes of differences in poultry profits. R. L. Michell and F. H. Branch. May, 1929.

252. Supplements for copper fungicides. E. B. Holland, C. O. Dunbar, and G. M. Gilligan. June, 1929.

253. Milk substitutes for calves. J. B. Lindsey and J. G. Archibald. July, 1929.

254. The preparation and effectiveness of basic copper sulfate as a fungicide. E. B. Holland, C. O. Dunbar, G. M. Gilligan, and W. L. Doran. June, 1929.

255. Studies in mineral nutrition. J. B. Lindsey and J. G. Archibald. Nov., 1929.

256. The cost of government in Massachusetts, 1910-1926. H. W. Yount and R. E. Sherburne. Nov., 1929.

257. The cutaneous vaccine for fowl pox. N. J. Pyle. Dec., 1929.

258. Inbreeding in relation to egg production. F. A. Hays. Dec., 1929.

259. Rate of growth in Rhode Island Reds. F. A. Hays and Ruby Sanborn. Dec., 1929.

260. Annual report for the fiscal year ending Nov. 30, 1929. F. J. Sievers [and others]. Mar., 1930.

261. Ecological studies of the Mexican bean beetle. H. L. Sweetman and H. T. Fernald. Feb., 1930.

262. Intensive grassland management. R. C. Foley, E. J. Montague, and C. H. Parsons. Feb., 1930.

263. Food service in Massachusetts rural elementary schools. Esther Davies. Apr., 1930.

264. Duration of annual molt in relation to egg production. F. A. Hays and Ruby Sanborn. June, 1930.

265. A chemical study of cranberries. F. W. Morse. Oct., 1930.

266. Part-time farming in Massachusetts. David Rozman. Oct., 1930.
 267. Hardy woody plants. F. A. Waugh and C. H. Thompson. Oct., 1930.
 268. Frozen sweet cream as an ingredient of ice cream. M. J. Mack. Dec., 1930.
 269. Packaged ice cream. K. E. Wright. Dec., 1930.
 270. Meteorological records, a forty-year summary, 1889-1928. C. I. Gunness. Dec., 1930.

MICHIGAN AGRICULTURAL EXPERIMENT STATION, EAST LANSING
 SPECIAL BULLETINS

187. What makes some farms pay, a business analysis of 114 farms in Eaton County, Michigan. E. B. Hill and F. T. Riddell. Feb., 1929.
 188. Pollination of orchard fruits in Michigan. R. E. Marshall, Stanley Johnston, H. D. Hootman, and H. M. Wells. Mar., 1929.
 189. The marketing of Michigan milk through creameries, cream stations, condenseries and cheese factories. F. T. Riddell and J. T. Horner. Feb., 1929.
 190. Oak forests of northern Michigan. Joseph Kittredge and A. K. Chittenden. June, 1929.
 191. Barley for Michigan farms: Part I [Barley production]; the culture of barley. H. C. Rather.—Part II, Barley varieties. E. E. Down, H. M. Brown, and F. H. Clark. Mar., 1929.
 192. Causes and effects of soil heaving. M. M. McCool and G. J. Bouyoucos. July, 1929.
 193. Cantaloupe production in Michigan. J. B. Edmond, A. B. Strand, and F. J. McNall. June, 1930.
 194. The use of peat in the greenhouse. Alex Laurie. Jan., 1930.
 195. Maintaining the productivity of cherry trees. V. R. Gardner. Mar., 1930.
 196. The farm woodlot in Michigan. A. K. Chittenden and P. W. Robbins. Apr., 1930.
 197. Oat tests at the Michigan experiment station. E. E. Down, H. M. Brown, and F. H. Clark. Apr., 1930.
 198. Combine harvester threshers in Michigan. E. C. Sauve. June, 1930.
 199. Studies in swine feeding, Parts I, II, III. W. E. J. Edwards. May, 1930.
 200. Hogging off corn. W. E. J. Edwards. May, 1930.
 201. The influence of sugar and butterfat on quality of ice cream. P. S. Lucas, Toshihide Matsui, and D. E. Mook. May, 1930.
 202. The propagation of the highbush blueberry. Stanley Johnston. May, 1930.
 203. Spraying materials and the control of apple scab. W. C. Dutton. Apr., 1930.
 204. Investigations of corn borer control at Monroe, Michigan. A. R. Marston and C. B. Dibble. May, 1930.
 205. Soil fertilization for sugar beets. James Tyson and M. M. McCool. Nov., 1930.
 206. Types of farming in Michigan. E. B. Hill, F. T. Riddell, and F. F. Elliott. Dec., 1930.

TECHNICAL BULLETINS

96. A local farm real estate price index. F. M. Thrun. Mar., 1929.
 97. Studies on the overwintering and modes of infection of the fire blight organism. E. C. Tullis. Apr., 1929.
 98. Further studies on the value of non-virulent living culture vaccination of cattle against *Brucella abortus* infection. I. F. Huddleson. Mar., 1929. Chart section published separately under title: Herd charts.
 99. Defective graft unions in the apple and the pear. F. C. Bradford and B. G. Sitton. June, 1929.
 100. The differentiation of the species of the genus *Brucella*. I. F. Huddleson. Aug., 1929.
 101. A test for water-soluble phosphorus. studies on water-soluble phosphorus in field scils. C. H. Spurway. Aug., 1929.
 102. Keeping qualities of butter: VI, Experiments on the production of metallic flavor in butter and milk; VII, the microbic flora of off-flavored butter. G. L. A. Ruehle. Jan., 1930.
 103. The pathogenicity of the species of the genus *Brucella* for the fowl. I. F. Huddleson and M. W. Emmel. Aug., 1929.
 104. The physiological effect of ethylene gas upon celery, tomatoes and certain fruits. R. P. Hibbard. Feb., 1930.
 105. The results of a five year mineral feeding investigation with dairy cattle. O. E. Reed and C. F. Huffman. Feb., 1930.
 106. The fruiting habits and pruning of the Campbell early grape. N. L. Partridge. June, 1930.

107. The Lansing food survey. C. A. Scholl and W. O. Hedrick. Nov., 1930.
 108. Influence of soil conditions, fertilizer treatments, and light intensity on growth, chemical composition, and enzymic activities of sugar beets. James Tyson. Oct., 1930.

QUARTERLY BULLETINS

Quarterly bulletins, Vol. 11, No. 3-Vol. 13, No. 2. February, 1929-November, 1930. Each number contains various articles relating to agricultural practice, based on investigational work of the station.

MINNESOTA AGRICULTURAL EXPERIMENT STATION, UNIVERSITY FARM, ST. PAUL

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250. Stoning farm lands. M. J. Thompson and A. J. Schwantes. Jan., 1929.
 251. Economic aspects of local elevator organization. Hutzel Metzger and H. B. Price. Apr., 1929.
 252. Reed canary grass. A. C. Arny, M. C. Hansen, R. E. Hodgson, and G. H. Nesom. Mar., 1929.
 253. Incomes and expenditures of village and town families in Minnesota. C. C. Zimmerman. Mar., 1929.
 254. Selection and use of pork cuts. A. M. Child. Apr., 1929.
 255. Incomes and expenditures of Minnesota farm and city families, 1927-28. C. C. Zimmerman. June, 1929.
 256. The combine harvester in Minnesota. A. J. Schwantes [and others]. July, 1929.
 257. Types of farming in Minnesota. L. F. Garey. Aug., 1929. Supplement is Bul. 268.
 258. A study of breeding records of dairy herds. C. H. Eckles. Nov., 1929.
 259. Common injurious mammals of Minnesota. M. S. Johnson. Jan., 1930.
 260. Double-crossed corn in Minnesota. H. K. Hayes, H. E. Brewbaker, and F. R. Immer. Feb., 1930.
 261. Sweet clover hay for beef cattle, fattening baby beefees and two-year-old steers. O. M. Kiser and W. H. Peters. Feb., 1930.
 262. Sources of power on Minnesota farms. W. L. Cavert. Feb., 1930.
 263. Reed canary grass for meadows and pastures. A. C. Arny, R. E. Hodgson, and G. H. Nesom. Feb., 1930.
 264. Small grain varieties in Minnesota. H. K. Wilson and A. C. Arny. Feb., 1930.
 265. Alfalfa as a rotation crop. P. E. Miller and R. O. Bridgford. May, 1930.
 266. Cost of combine harvesting in Minnesota. G. A. Pond and L. B. Bassett. May, 1930.
 267. Alfalfa trials at the North central experiment station. O. I. Bergh. June, 1930.
 268. Systems of farming in northwestern Minnesota. L. F. Garey and F. F. Elliott. Aug., 1930. Supplement to Bul. 257.
 269. Farm trade centers in Minnesota, 1905-29, a study of rural social organization. C. C. Zimmerman. Sept., 1930.
 270. Factors affecting the physical and economic cost of butterfat production in Pine County, Minnesota. G. A. Pond and Mordecai Ezekiel. Dec., 1930.
 271. Lumber production and wood utilization in southeastern Minnesota, with special reference to the farm woodlot. L. W. Rees. Aug., 1930.
 272. Fattening lambs. P. S. Jordan and W. H. Peters. Dec., 1930.
 273. Fat losses in buttermilk. W. B. Combs and S. T. Coulter. Nov., 1930.

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57. Tables for determining the volume of black spruce. R. M. Brown. Apr., 1929.
 58. Potato breeding methods: II, Selection in inbred lines. F. A. Krantz and A. E. Hutchins. Apr., 1929.
 59. Susceptibility of wheat varieties and hybrids to Fusarial head blight in Minnesota. J. J. Christensen, E. C. Stakman, and F. R. Immer. Apr., 1929.
 60. Forest possibilities of aspen lands in the Lake States. Joseph Kittredge, jr., and S. R. Gevorkian. May, 1929.
 61. A preliminary account of the raspberry aphids. J. D. Winter. Sept., 1929.
 62. Daily growth of the oat kernel and effect on germination of immaturity and controlled low temperatures. E. G. Booth. Sept., 1929.
 63. A new method for estimating the true fat content of buttermilk. W. E. Petersen and E. O. Herreid. Feb., 1929.
 64. Some of the factors influencing the growth of molds in butter. Harold Macy. Dec., 1929.

65. Mutation and hybridization in *Ustilago zeae*: Part I, Mutation. E. C. Stakman, J. J. Christensen, C. J. Elde, and Bjorn Peturson.— Part II, Hybridization. J. J. Christensen. Dec., 1929.

66. Identification of cultivated raspberries. J. D. Winter. Apr., 1930.

67. Studies on the nature of physiologic resistance to *Puccinia graminis tritici*. W. N. Ezekiel. Oct., 1930.

68. Inheritance studies in *Phaseolus vulgaris*. T. M. Currence. Aug., 1930.

69. A study of senescence in the red raspberry cane. W. G. Brierley. Sept., 1930.

70. Aspen availability, properties, and utilization. R. P. A. Johnson, Joseph Kittredge, jr., and Henry Schmitz. Aug., 1930.

71. Factors that influence the development and survival of the ova of an ascarid round-worm, *Toxocara canis* (Werner, 1782) Stiles, 1905, under field conditions. W. B. Owen. Sept., 1930.

72. Minnesota agriculture, indexes of prices, quantities, and cash incomes, 1910-27. A. G. Black and Dorothea Kittredge.

73. Studies of the test tube agglutination test for the diagnosis of Bang's disease (contagious abortion). C. P. Fitch, C. R. Donham, L. M. Bishop, and W. L. Boyd. Nov., 1930.

74. Physiologic specialization in *Fusarium* spp. causing headblight of small grains. Chih Tu. Dec., 1930.

75. The Coccinellidae (ladybird beetles) of Minnesota (Coleoptera). W. C. Stehr. Dec., 1930.

MISSISSIPPI AGRICULTURAL EXPERIMENT STATION, A. & M. COLLEGE

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267. Landscape gardening in home beautification. Wellington Kennedy. July, 1929.

268. Beef cattle production in Mississippi. G. S. Templeton. June, 1929.

269. Progress report on cost of production route in Jones County, Mississippi, 1928. L. E. Long and J. R. Allen. June, 1929.

270. Mule feeding experiments. G. S. Templeton. Aug., 1929.

271. Report of the Raymond branch experiment station, 1929. H. F. Wallace and J. L. Cooley, jr. Dec., 1929.

272. Report of the Holly Springs branch experiment station, 1929. C. T. Ames and O. B. Casanova. Dec., 1929.

273. Nitrogen fertilizers for tomato production. J. L. Cooley, jr. Jan., 1930.

274. Report of the South Mississippi branch experiment station. W. R. Perkins, W. S. Anderson, and W. W. Welborne. Dec., 1929.

275. Report from the Natchez branch experiment station on pecan work to December, 1929. S. J. Greer and W. T. Mallory. Dec., 1929.

276. Farm practices in south central Mississippi with suggested changes. L. E. Long and R. S. Kifer. Dec., 1929.

277. Comparison of one-year-old and "June-bud" peach stock for orchard planting. J. C. C. Price. July, 1930.

278. Comparison of roughage for finishing steers. D. S. Buchanan. July, 1930.

279. The production and storage of sweet potatoes. J. C. C. Price. Aug., 1930.

280. Propagation studies with the southern blueberry. L. M. Ware. Aug., 1930.

281. Grape varieties. J. C. C. Price. Aug., 1930.

282. The rural tax situation in Choctaw County, Miss., 1928. L. E. Long. Aug., 1930.

283. Grazing and feeding trials with corn and soybeans for pork production. P. G. Bedenbaugh. July, 1930.

284. Varieties of peaches. J. C. C. Price. Aug., 1930.

285. Report of the South Mississippi branch experiment station for 1930. J. C. Robert, W. W. Welborne, and J. L. Cooley, jr. Dec., 1930.

286. Report of the Holly Springs branch experiment station, 1930. T. F. McGehee and O. B. Casanova. Dec., 1930.

287. Report of the Raymond branch experiment station, 1930. H. F. Wallace. Dec., 1930.

288. Cotton variety summary, 1926-1930. J. F. O'Kelly and W. W. Hull. Dec., 1930.

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17. Bacteriological effects of green manure, Study No. III. C. F. Briscoe and H. H. Harned. June, 1929.

18. Cotton inheritance studies: Lint percentage. J. F. O'Kelly and W. W. Hull. Sept., 1930.

MISSOURI AGRICULTURAL EXPERIMENT STATION, COLUMBIA

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264. The soils of Missouri. M. F. Miller and H. H. Krusekopf. Jan., 1929. Revision of 153.

265. Blackberries, raspberries, and dewberries. H. G. Swartwout. Jan., 1929.

266. Soybeans and soybean oil meal in swine rations. L. A. Weaver. Feb., 1929.

267. Developing new markets for Missouri butterfat. F. L. Thomsen and W. H. E. Reid. Feb., 1929.

268. The use of electricity on Missouri farms. R. R. Parks. Feb., 1929.

269. Land valuation, II. J. T. Waddill [and others]. Mar., 1929.

270. Testing fertilizers for Missouri farmers, 1928. L. D. Haigh. May, 1929.

271. The control of gullies. H. E. Uhland and J. C. Wooley. May, 1929.

272. How the experiment station solves farm problems: One year's work, agricultural experiment station (Report of the director, July 1, 1927, to June 30, 1928). F. B. Mumford [and others]. May, 1929.

273. Economic position of the grape industry in Missouri. F. L. Thomsen and G. B. Thorne. July, 1929.

274. Selecting the dairy sire. A. C. Ragsdale and Warren Gifford. Sept., 1929.

275. Care, feeding and management of the dairy sire. A. C. Ragsdale and Warren Gifford. Oct., 1929.

276. Testing fertilizers, spring, 1929. F. B. Mumford and L. D. Haigh. Oct., 1929.

277. The cooperative marketing of fruits and vegetables on the St. Louis market. F. L. Thomsen. Dec., 1929.

278. Columbia oats, a new variety for Missouri. L. J. Stadler and R. T. Kirkpatrick. Jan., 1930.

279. Time of harvesting soybeans, in relation to soil improvement and protein content of the hay. R. E. Uhland. Feb., 1930.

280. Korean lespedeza in Missouri. W. C. Etheridge, C. A. Helm, and B. M. King. Feb., 1930.

281. Feeding dairy cattle. A. C. Ragsdale. Mar., 1930.

282. Legume inoculation. W. A. Albrecht. Mar., 1930.

283. Fruit pollination. A. E. Murneek. Mar., 1930.

284. Registration, labeling, inspection and sale of commercial fertilizers, 1929. L. D. Haigh. Apr., 1930.

285. Experiment station research: [Report of the agricultural experiment station for the year ending June 30, 1929.] F. B. Mumford [and others]. Apr., 1930.

286. The combine harvester in Missouri. M. M. Jones. May, 1930.

287. Production and feeding of silage. L. J. Stadler, M. M. Jones, C. W. Turner, and P. M. Bernard. July, 1930.

288. The influence of various protein concentrates on egg production. H. L. Kempster. Aug., 1930.

289. Coccidiosis in fowls. A. J. Durant. Aug., 1930.

290. Prevention and eradication of infectious abortion in cattle. J. W. Connaway. Aug., 1930.

291. The Missouri farmers' tax position. C. H. Hammar. Aug., 1930.

292. Inspection and analysis of commercial fertilizers, spring, 1930. F. B. Mumford and L. D. Haigh. Oct., 1930.

293. How certain methods of cooking affect the quality and palatability of beef. J. A. Cline, E. A. Trowbridge, M. T. Foster, and H. E. Fry. Nov., 1930.

294. Growing orchard grass in south Missouri. C. A. Helm. Nov., 1930.

295. Leukemia in fowls. A. J. Durant. Dec., 1930.

RESEARCH BULLETINS

122. The relation of inadequate rations to the weights of the internal organs of chicks. A. G. Hogan, C. L. Shrewsbury, and H. L. Kempster. Apr., 1929.

123. Retarded growth and mature size of beef steers. A. G. Hogan. July, 1929.

124. The effect of inadequate rations on the composition of the blood and of the bone of chicks. A. G. Hogan, C. L. Shrewsbury, and H. L. Kempster. Aug., 1929.

125. Contacts in a rural community. H. J. Burt. Aug, 1929.

126. The effect of different pasteurization temperatures on several of the physical properties of milk. W. H. E. Reid. Sept., 1929.

127. The effect of homogenization at different pressures on the physical properties of an ice cream mixture and the resulting ice cream. W. H. E. Reid and G. R. Skinner. Sept., 1929.

128. The effect of processing ice cream mixtures at different pressures when the milk solids not fat content is varied. W. H. E. Reid and E. R. Garrison. Oct., 1929.

129. The effect of the amount and nature of exchangeable cations on the structure of a colloidal clay. L. D. Baver. Oct., 1929.

130. A statistical study of the size of fat globules in cows' milk. C. W. Turner and A. C. Haskell. Nov., 1929.

131. A classification of soybeans. W. C. Etheridge, C. A. Helm, and B. M. King. Dec., 1929.

132. Legume bacteria with reference to light and longevity. W. L. Albrecht and L. M. Turk. Jan., 1930.

133. Blackhead in turkeys, surgical control by cecal ablation. A. J. Durant. Mar., 1930.

134. The effect of different homogenization processes on the physical properties of an ice cream mixture and the resulting ice cream when the percentage of fat is varied and the solids not fat remain constant. W. H. E. Reid and L. B. Russell. Mar., 1930.

135. Factors influencing properties of fermented reconstructed milk. W. H. E. Reid and F. F. Welch. Mar., 1930.

136. Studies on the pathology and physiology of the cecal pouches of turkeys: II, The utilization of food by turkeys with abligated ceca. J. E. Hunter, A. J. Durant, and A. G. Hogan. Mar., 1930.

137. Factors involved in buying Missouri cream. F. L. Thomsen and W. H. E. Reid. Mar., 1930.

138. Apple pollination investigations. A. E. Murneek, W. W. Yocom, and E. N. McCubbin. Apr., 1930.

139. A partial analysis of the Missouri pig survey reports. F. L. Thomsen and Preston Richards. May, 1930.

140. The anatomy of the mammary gland of cattle: I, Embryonic development. C. W. Turner. June, 1930.

141. Growth and development, with special reference to domestic animals: XIII, The influence of certain geographical and historical conditions on the physical development of Lombardy, Brown-Swiss, Brittany, dairy Shorthorn, Ayrshire, and beef Shorthorn breeds of cattle. John Ashton. June, 1930.

142. Growth and development, with special reference to domestic animals: XIV (a) Measurements of growing Holstein and Jersey cattle on Missouri farms. A. C. Ragsdale and M. J. Regan.— (b) Prediction charts for growth of cattle. Samuel Brody and A. C. Ragsdale. June, 1930.

143. Growth and development, with special reference to domestic animals: XV, Energy and nitrogen metabolism during the first year of postnatal life. Samuel Brody [and others]. June, 1930.

144. The mode of inheritance of yearly butterfat production, an analysis of the progeny performance of Holstein-Friesian sires; genealogy tables of Holstein-Friesian sires. Warren Gifford. June, 1930.

145. The effect of the estrus producing hormone on the growth of the mammary gland. C. W. Turner and A. H. Frank. July, 1930.

146. Marketing stock hogs in Missouri. Preston Richards and F. L. Thomsen. July, 1930.

147. The inheritance of body weight in relation to milk secretion. C. W. Turner. Aug., 1930.

148. Social, economic, and homemaking factors in farm living. R. C. Hill, E. L. Morgan, M. V. Campbell, and O. R. Johnson. July, 1930.

149. Growth and development, with special reference to domestic animals: XVI, The influence of temperature and breeding upon the rate of growth of chick embryos. E. W. Henderson. Sept., 1930.

150. A study of the estrus producing hormone in the urine of cattle during pregnancy. C. W. Turner, A. H. Frank, C. H. Lomas, and C. W. Nibler. Sept., 1930.

151. Variations in local prices for farm products and supplies in Missouri. F. L. Thomsen. Nov., 1930.

152. A study on the influence of climate upon the nitrogen and organic matter content of the soil. Hans Jenny. Nov., 1930.

MONTANA AGRICULTURAL EXPERIMENT STATION, BOZEMAN

BULLETINS

218. The McIntosh apple industry in western Montana. S. E. Johnson. Jan., 1929.

219. The county library in Montana. J. W. Barger. Jan., 1929.

220. An economic analysis of production problems in the Bitter Root Valley. S. E. Johnson. Jan., 1929.

221. Rural community halls in Montana. J. W. Barger. Jan., 1929.

222. The influence of fallow on yield and protein content of wheat. Edmund Burke and R. M. Pinckney. July, 1929.

223. Some effects of temperature and moisture upon *Melanoplus mexicanus mexicanus* Saussure and *Camnula pellucida* Scudder (Orthoptera). J. R. Parker. Jan., 1930.

224. The rural community club in Montana. J. W. Barger. Jan., 1930.

225. Field studies of the pale western cutworm (*Porosagrotis orthogonia* Morr.). W. C. Cook. Feb., 1930.

226. Current problems of Montana farmers' elevators. E. J. Bell, jr. Feb., 1930.

227. Potato diseases in Montana. H. E. Morris and P. A. Young. Mar., 1930.

228. Soils of Blaine County, soil reconnaissance of Montana, preliminary report. L. F. Gieseke. Mar., 1930.

229. Tractor hitches. H. E. Murdock. May, 1930.

230. The combined harvester-thresher in Montana. A. E. Starch and R. M. Merrill. June, 1930.

231. Researches on potato-virus diseases in Montana. P. A. Young and H. E. Morris. June, 1930.

232. Successful farming practices in the Billings beet region. E. J. Bell, jr. Sept., 1930.

233. Dry-land shelter-belt tests at the Judith Basin branch station. I. J. Jensen and F. M. Harrington. Oct., 1930.

234. Wheat varieties under irrigation. LeRoy Powers. Oct., 1930.

235. Dry-land shelter-belt tests at the Northern Montana branch station. F. M. Harrington and G. W. Morgan. Oct., 1930.

236. Pasture crops for spring pigs, their value and use. W. E. Joseph. Dec., 1930.

237. An economic analysis of production problems on the Flathead irrigation project. S. E. Johnson. Dec., 1930.

238. Montana insect pests for 1929 and 1930, the Twenty-third report of the state entomologist of Montana. R. A. Cooley. Dec., 1930.

239. Present and prospective development of farming systems in western Montana. S. E. Johnson. Dec., 1930.

NEBRASKA AGRICULTURAL EXPERIMENT STATION, LINCOLN

BULLETINS

233. Nebraska tractor tests, 1920-1928. Jan., 1929.

234. Water carried for household purposes on Nebraska farms. M. R. Clark and Greta Gray. May, 1929.

235. Unit electric plants for Nebraska farms, a survey of present conditions and a study of types of plants. E. E. Brackett and E. B. Lewis. May, 1929.

236. Rural electric service supplied from central stations in Nebraska in 1927. E. E. Brackett and E. B. Lewis. July, 1929.

237. Cane versus spur pruning for grapes. C. C. Wiggans. Nov., 1929.

238. The routine and seasonal work of Nebraska farm women. M. R. Clark and Greta Gray. Jan., 1930.

239. (North Platte experiment substation Bul. 28.) The use of alfalfa pasture for fattening cattle. W. P. Snyder. Mar., 1930.

240. Alfalfa wilt in Nebraska. G. L. Peltier and J. H. Jensen. Apr., 1930.

241. (Valentine experiment substation Bul. 3.) Clover in the subirrigated meadows of the Sand Hills. E. M. Brouse. Apr., 1930.

242. Nebraska tractor tests, 1920-1929. Mar., 1930.

243. (North Platte experiment substation Bul. 29.) Pork production at the North Platte substation. W. P. Snyder. Apr., 1930.

244. Types of farming in Nebraska. Harold Hedges and F. F. Elliott. May, 1930.

245. Water supply and sewage disposal systems for farm homes. I. D. Wood and E. B. Lewis. May, 1930.

246. Testing ice cream for butterfat. L. K. Crowe. June, 1930.

247. The relation of environmental conditions in poultry houses to winter egg production. C. W. Smith. Aug., 1930.

248. The cost of clothing the Nebraska farm family. J. O. Rankin. Aug., 1930.

249. The mechanical dairy cooler on Nebraska farms, a study of four walk-in type installations. E. E. Brackett and E. B. Lewis. Sept., 1930.

250. Raising early lambs from aged western ewes. A. D. Weber. Sept., 1930.

251. Barley as hog feed. W. J. Loeffel. Oct., 1930.

252. Sex and age as factors in cattle feeding. H. J. Gramlich and R. R. Thalman. Oct., 1930.

RESEARCH BULLETINS

43. On the nature and cause of "the walking disease" of northwestern Nebraska (necrobiosis et cirrhosis hepatitis enzootica). Leunis Van Es, L. R. Cantwell, H. M. Martin, and J. Kramer. July, 1929.
44. Seed potato treatment tests for control of seab and Rhizoctonia. R. W. Goss and H. O. Werner. Dec., 1929.
45. Effect of cultural methods and maturity upon the seed value of eastern Nebraska potatoes. H. O. Werner. Dec., 1929.
46. Economic aspects of contagious abortion in a dairy herd. R. F. Morgan and H. P. Davis. May, 1930.
47. The symptoms of spindle tuber and unmottled curly dwarf of the potato. R. W. Goss. May, 1930.
48. A study of kerosene cook stoves. E. B. Snyder. July, 1930.
49. The incidence of avian tuberculosis in mammals other than swine. Leunis Van Es and H. M. Martin. Aug., 1930.
50. The food habits of the ring-necked pheasant in central Nebraska. M. H. Swenk. Nov., 1930.
51. Breeding winter wheat for resistance to stinking smut (*Tilletia levis* and *Tilletia tritici*). T. A. Kiesselbach and Arthur Anderson. Dec., 1930.
52. The relative susceptibility of alfalfas to wilt and cold. G. L. Peltier and H. M. Tysdal. Dec., 1930.

NEVADA AGRICULTURAL EXPERIMENT STATION, RENO

BULLETINS

116. Simplified methods of calculating dairy rations. F. B. Headley. June, 1929.
117. Factors affecting the cost of production of alfalfa hay in western Nevada. F. B. Headley and R. M. Clawson. Nov., 1929.
118. Efficiency in dairying. F. B. Headley and Cruz Venstrom. June, 1930.
119. Feeding experiments with dairy cows. F. B. Headley. Aug., 1930.
120. Economic history of the Newlands irrigation project. F. B. Headley and Cruz Venstrom. Oct., 1930.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION, DURHAM

BULLETINS

237. Inspection of commercial fertilizers for 1928, made for the State department of agriculture. T. G. Phillips, T. O. Smith, and F. S. Schlenker. Jan., 1929.
238. New Hampshire agricultural experiment station report for 1928. J. C. Kendall. Feb., 1929.
239. Potato production costs in New Hampshire. M. F. Abell. May, 1929.
240. Simplified technique and apparatus for measuring energy requirements of cattle. E. G. Ritzman and F. G. Benedict. May, 1929.
241. White Mountain demand for vegetables and poultry products. E. H. Rinear. May, 1929.
242. The energy and the protein content of foods regularly eaten in a college community. F. G. Benedict and A. G. Farr. May, 1929.
243. Mosquitoes of New Hampshire, a preliminary report. P. R. Lowry. June, 1929.
244. Electric household refrigeration. W. T. Ackerman. June, 1929.
245. Inspection of commercial feeding stuffs, 1929, made for the State department of agriculture. T. G. Phillips, T. O. Smith, and F. S. Schlenker. July, 1929.
246. Results of seed tests for 1929, made for the State department of agriculture. M. G. Eastman and B. I. Glidden. Sept., 1929.
247. The white pine weevil in New Hampshire. C. C. Plummer and A. E. Pillsbury. Oct., 1929.
248. Inspection of commercial fertilizers for 1929, made for the State department of agriculture. T. G. Phillips, T. O. Smith, and J. C. Fritz. Dec., 1929.
249. Roadside marketing in New Hampshire. M. G. Eastman. Dec., 1929.
250. Agricultural experiments, 1929, report of the New Hampshire agricultural experiment station. J. C. Kendall. Feb., 1930.
251. Operating costs of retail grain stores in New Hampshire. E. H. Rinear. July, 1930.
252. Results of seed tests for 1930, made for the State department of agriculture. B. I. Glidden. Sept., 1930.

253. Inspection of commercial feeding stuffs, 1930, made for the State department of agriculture. T. G. Phillips, T. O. Smith, and J. C. Fritz. Aug., 1930.

254. Inspection of commercial fertilizers for 1930, made for the State department of agriculture. T. G. Phillips, T. O. Smith, and S. J. Fisher. Dec., 1930.

TECHNICAL BULLETINS

39. Studies of contact insecticides: I, Surface tension, surface activity, and wetting ability as factors in the performance of contact insecticides. W. C. O'Kane, W. A. Westgate, L. C. Glover, and P. R. Lowry. Feb., 1930.

40. Studies of contact insecticides: II, Lime sulphur in relation to San Jose and oyster shell scales. W. C. O'Kane and J. G. Conklin. May, 1930.

41. Some effects of defloration on fruit spur composition and fruit bud formation in the Oldenburg apple. G. F. Potter, H. R. Kraybill, S. W. Wentworth, J. T. Sullivan, and P. T. Blood. June, 1930.

42. Composition and fruit bud formation in non-bearing spurs of the Baldwin apple. G. F. Potter and T. G. Phillips. June, 1930.

43. The energy metabolism of sheep. E. G. Ritzman and F. G. Benedict. June, 1930.

44. The relation of hydrophilic colloids to hardness in the apple as shown by the dye adsorption test. Stuart Dunn. Aug., 1930.

NEW JERSEY AGRICULTURAL EXPERIMENT STATIONS, NEW BRUNSWICK

BULLETINS

482. Fertilizer registrations for 1929. C. S. Cathcart. Jan., 1929.

483. Winter wheat tests in New Jersey. H. B. Sprague and E. E. Eval. May, 1929.

484. Results of seed and legume inoculant inspection for 1928. J. G. Fiske. Jan., 1929.

485. Analyses of materials sold as insecticides and fungicides during 1929. C. S. Cathcart and R. L. Willis. Oct., 1929.

486. Annual report of the Department of sewage disposal, July 1, 1927-June 30, 1928. Willem Rudolfs [and others]. Apr., 1929.

487. Farmers' cooperation in New Jersey, 1926. C. B. Howe. Oct., 1929.

488. Analyses of commercial feeding stuffs and registrations for 1929. C. S. Cathcart. June, 1929.

489. Studies on Raritan River pollution, 1927-28. Willem Rudolfs, Houhaness Heukeleekian, J. B. Lackey, P. J. A. Zeller, and I. O. Lacy. Oct., 1929.

490. Analyses of commercial fertilizers, fertilizer supplies, and home mixtures for 1929. C. S. Cathcart. Oct., 1929.

491. Cranberry false blossom and the blunt-nosed leafhopper. C. S. Beckwith and S. B. Hutton. Dec., 1929.

492. Results of seed and legume inoculant inspection for 1929. J. G. Fiske. Jan., 1930.

493. Analyses of commercial fertilizers and ground bone; analyses of agricultural lime, 1929. C. S. Cathcart. Dec., 1929.

494. Development and ripening of peaches as correlated with physical characteristics, chemical composition, and histological structure of the fruit flesh: III, Macrochemistry. G. T. Nightingale, R. M. Addoms, and M. A. Blake. Feb., 1930.

495. Fertilizer registrations for 1930. C. S. Cathcart. Jan., 1930.

496. Effect of chemicals upon the behavior of mosquitoes. Willem Rudolfs. Mar., 1930.

497. Experiments with turf grasses in New Jersey. H. B. Sprague and E. E. Eval. Mar., 1930.

498. The influence of lime in vegetable growing. A. W. Blair and A. L. Prince. Mar., 1930.

499. Some effects of potassium deficiency on the histological structure and nitrogenous and carbohydrate constituents of plants. G. T. Nightingale, L. G. Schermerhorn, and W. R. Robbins. Apr., 1930.

500. Action of enzymes on sewage solids. N. S. Chamberlin. Mar., 1930.

501. Effect of fertilizers on cranberry land. C. S. Beckwith. June, 1930.

502. Annual report of the Department of sewage disposal July 1, 1928-June 30, 1929. Willem Rudolfs [and others]. Apr., 1930.

503. The motor truck as a carrier of fruits and vegetables to Greater New York. B. M. Price. June, 1930.

504. Increasing the color of cranberries after removal from the vines. B. R. Fudge. Oct., 1930.

505. Analyses of commercial feeding stuffs and registrations for 1930. C. S. Cathcart. June, 1930.

506. The consumption of dairy products in six New Jersey townships. W. C. Waite and C. B. Howe. June, 1930.

507. Development and ripening of peaches as correlated with physical characteristics, chemical composition, and histological structure of the fruit flesh: II, Histology and microchemistry. R. M. Addoms, G. T. Nightingale, and M. A. Blake. Sept., 1930.

508. Creamery inspection in New Jersey, ninth annual report. H. H. Tucker. Sept., 1930.

509. Premature heading of cauliflower as associated with the chemical composition of the plant. W. R. Robbins, G. T. Nightingale, and L. G. Schermerhorn. Jan., 1931.

510. Some studies of the larval parasites of the oriental peach moth (*Laspeyresia molesta* Busck). B. F. Driggers. Oct., 1930.

511. Length of the fruit development period of the Elberta and some other varieties of peaches. M. A. Blake. Oct., 1930.

512. Experiments with alfalfa, clover, and timothy for hay in New Jersey. H. B. Sprague. E. E. Eavaul, H. W. Reuszer, and N. F. Farris. Nov., 1930.

513. Analyses of materials sold as insecticides and fungicides during 1930. C. S. Cathcart and R. L. Willis. Oct., 1930.

514. Analyses of commercial fertilizers, fertilizer supplies, and home mixtures for 1930. C. S. Cathcart. Nov., 1930.

515. The milk supply of the New Jersey metropolitan market, including some comments concerning sales in the north shore and rural markets. C. B. Howe. Nov., 1930.

NEW MEXICO AGRICULTURAL EXPERIMENT STATION, STATE COLLEGE

BULLETINS

171. Almonds. A. B. Fite. Jan., 1929.

172. The preparation and use of oil sprays. J. R. Eyer and R. F. Crawford. Jan., 1929.

173. The poisoning of livestock by *Drymaria pachyphylla*. J. L. Lantow. Feb., 1929.

174. Plum variety test. A. B. Fite and Fabian Garcia. Mar., 1929.

175. The composition of cottonseed produced in New Mexico. C. W. Botkin. Apr., 1929.

176. Crop production at the Tucumcari field station. D. R. Burnham and H. J. Clemmer. May, 1929.

177. New Mexico egg storage studies, Part I. A. L. Walker, L. N. Berry, and E. E. Anderson. June, 1929.

178. (Technical.) The digestibility of cottonseed meal as a supplemental feed for range cattle in New Mexico. W. E. Watkins. July, 1929.

179. Cottonseed meal with various roughages as fattening rations for lambs. R. F. Cox.—Analyses of cottonseed meal and cottonseed hulls for gossypol. W. E. Watkins. July, 1929.

180. Cabbage fertilizer experiments. A. B. Fite. Jan., 1930.

181. Cotton varieties. J. C. Overpeck and W. T. Conway. Mar., 1930.

182. Climate as it affects crops and ranges in New Mexico. C. E. Linney, Fabian Garcia, and E. C. Hollinger. Mar., 1930.

183. The relative value of cottonseed meal and tankage for egg production. L. N. Berry. May, 1930.

184. The ground water of Middle Rio Grande Valley and its relation to drainage. D. W. Bloodgood. May, 1930.

185. Supplemental feeding of range cattle. J. L. Lantow. June, 1930.

186. A five-year economic study of 125 farms in Curry and Roosevelt Counties, New Mexico, Part I of Economics of agriculture on dry-land farms in eastern New Mexico. L. H. Hauter, A. L. Walker, and O. V. Wells. June, 1930.

187. Production requirements, costs, and returns from dry-land farming in eastern New Mexico, Part. II of Economics of agriculture on dry-land farms in eastern New Mexico. L. H. Hauter, A. L. Walker, and O. V. Wells. June, 1930.

NEW YORK CORNELL AGRICULTURAL EXPERIMENT STATION, ITHACA

BULLETINS

473. The cost of handling fluid milk and cream in country plants. C. K. Tucker. Jan., 1929.

474. The fumigation of greenhouses to destroy insect pests. G. W. Herrick and G. H. Griswold. Feb., 1929.

475. The production and marketing of New York market peas. Dilworth Walker. May, 1929.

476. The utilization of marginal lands. William Allen. May, 1929.

477. Composition and body of butter. E. S. Guthrie. May, 1929.

478. An economic study of farm buildings in New York. I. F. Hall. May, 1929.

479. The relationships between roads and agriculture in New York. J. L. Tennant. May, 1929.

480. Premature seeding of celery. H. C. Thompson. May, 1929.

481. The clover-flower midge (*Dasyneura leguminicola* Lintner). L. F. Wehrle. May, 1929.

482. Soil and field-crop management for Yates County, New York. H. O. Buckman, H. P. Cooper, and F. B. Howe. June, 1929.

483. Economic studies of dairy farming in New York: IX, Grade B milk with cash crops and mixed hay roughage, crop year 1925 with five-year summary. J. C. Neethling. June, 1929.

484. A comparison of the cost of maintenance of large and of small county boards in the United States, a study in the cost of government. M. S. Kendrick. June, 1929.

485. Farm-property taxation in New York. I. J. Call. June, 1929.

486. An economic study of the collection of milk at country plants in New York. Leland Spencer. June, 1929.

487. Rural population, Tompkins and Schuyler Counties, New York, 1925. B. L. Melvin. June, 1929.

488. A study of some factors affecting seed-stalk development in cabbage. J. C. Miller. June, 1929.

489. The clover-leaf caterpillar (*Olethreutes cespitana* Hübner) and the clover-leaf tyer (*Anchylopera angulifasciana* Zeller). L. P. Wehrle. June, 1929.

490. Abandoned farm areas in New York. L. M. Vaughan. July, 1929.

491. Varietal experiments with soybeans in New York. R. G. Wiggans. July, 1929.

492. Organization of the sewing center in the home. E. M. Cushman. Aug., 1929.

493. Village service agencies, New York, 1925. B. L. Melvin. Aug., 1929.

494. Some facts concerning the distribution of fruits and vegetables by wholesalers and jobbers in large terminal markets. M. P. Rasmussen. Oct., 1929.

495. Apple varieties: Prices, yields, and acreages. G. P. Scoville and T. E. LaMont Dec., 1929.

496. An economic study of farm electrification in New York, with a discussion of rural electrification in the provinces of Quebec and Ontario, Canada. R. F. Bucknam. Dec., 1929.

497. Pollination and other factors affecting the set of fruit, with special reference to the apple. L. H. MacDaniels and A. J. Heinicke. Dec., 1929.

498. Protecting orchard crops from diseases and insects. C. R. Crosby, W. D. Mills, and W. E. Blauvelt. Dec., 1929.

499. The effect of dusting-sulfur upon the germination of pollen and the set of fruit of the apple. L. H. MacDaniels and J. R. Furr. Feb., 1930.

500. Legumes as a source of available nitrogen in crop rotations. T. L. Lyon. Feb., 1930.

501. Social relationships of Slaterville Springs, Brooktondale area, Tompkins County, New York. G. A. Bakkum and B. L. Melvin. Mar., 1930.

502. An economic study of food consumed by farm and village families in central New York. F. M. Williams and J. E. Lockwood. Apr., 1930.

503. The molting factor in judging fowls for egg production. D. R. Marble. Apr., 1930.

504. A partial sociological study of Dryden, New York, with special emphasis on its historical development. G. M. Kensler and B. L. Melvin. May, 1930.

505. Some factors affecting the cost of operation of retail feed stores in New York State. Whiton Powell. June, 1930.

506. An economic study of tractors on New York farms. C. W. Gilbert. June, 1930.

507. Motor trucks on New York farms. C. W. Gilbert. June, 1930.

508. Lead-arsenate experiments on the germination of weed seeds. W. C. Muenscher. June, 1930.

509. Results of sweet-corn suckering experiments on Long Island. H. C. Thompson, H. S. Mills, and P. H. Wessels. June, 1930.

510. Growing onions on the muck soils of New York. J. E. Knott. Sept., 1930.

511. The collection of taxes by the state of New York, and the division of these revenues with units of local government. M. S. Kendrick. Sept., 1930.

512. The money income of farm boys in a southern New York dairy region. H. W. Beers. Sept., 1930.

513. The chemical composition of New York soils. J. A. Bizzell. Oct., 1930.

514. Soil and field-crop management for Chenango County, New York. A. F. Gustafson. H. O. Buckman, and H. P. Cooper. Dec., 1930.

MEMOIRS

121. Variation and correlation in the appendages of the honeybee. E. F. Phillips. Feb., 1929.

122. The effect of freezing on the catalase activity of apple fruits. D. B. Carrick. Mar., 1929.

123. Three rust diseases of the apple. H. E. Thomas and W. D. Mills. Mar., 1929.

124. The Rhizoctonia damping-off of conifers, and its control by chemical treatment of the soil. J. S. Wiant. Apr., 1929.

125. Inheritance and linkage relations of virescent seedlings in maize. I. F. Phipps. Aug., 1929.

126. Effect of storage in finely divided feeds upon the stability of the D vitamin of cod-liver oil. L. C. Norris, G. F. Heuser, and H. S. Wilgus. Nov., 1929.

127. The bacterial diseases of the bean, a comparative study. W. H. Burkholder. Apr., 1930.

128. Studies on fungicides: I, Concepts and terminology. H. H. Whetzel and S. E. A. McCallan.— II, Testing protective fungicides in the laboratory; III, the solvent action of spore excretions and other agencies on protective copper fungicides. S. E. A. McCallan. May, 1930.

129. Genetical and cytological studies of Mendelian asynapsis in *Zea mays*. G. W. Beadle. May, 1930.

130. A study of meadow-crop diseases in New York. J. G. Horsfall. June, 1930.

131. Some cold-storage and freezing studies on the fruit of the vinifera grape. D. B. Carrick. Aug., 1930.

132. Biochemistry and biophysics of the developing hen's egg: I, Influence of humidity. A. L. Romanoff. Aug., 1930.

133. The effect of spiral ringing on solute translocation and the structure of the regenerated tissues of the apple. L. H. MacDaniels and O. F. Curtis. Oct., 1930.

134. Lysimeter experiments: III, Records for tanks 3 to 12 during the years 1910 to 1924 inclusive. T. L. Lyon, J. A. Bizzell, B. D. Wilson, and E. W. Leland. Nov., 1930.

NEW YORK STATE AGRICULTURAL EXPERIMENT STATION, GENEVA

BULLETINS

562. High-nicotine tobacco. R. C. Collison, J. D. Harlan, and L. R. Streeter. Jan., 1929.

563. Fruit regions and varieties of eastern New York. H. B. Tukey. Feb., 1929.

564. Potato seed treatment experiments on Long Island with special reference to the organic mercury instant dips. E. E. Clayton. Feb., 1929.

565. The quality of packet vegetable seed on sale in New York in 1926, 1927, and 1928. M. T. Munn, O. M. Hoeffel, and M. E. Woodbridge. Mar., 1929.

566. I, The microscopic appearance of unpasteurized market milk and cream. R. S. Breed. Mar., 1929. Revision of Tech. Bul. 120.

567. Bacterial counts in sanitary milk control. R. S. Breed. Mar., 1929.

568. The sanitary significance of leucocytes in milk. R. S. Breed. Apr., 1929.

569. Seedling fruit stocks. H. B. Tukey. Apr., 1929.

570. Control of spoilage in tomato products. C. S. Pederson and R. S. Breed. Aug., 1929.

571. Bacteria that survive and grow during the pasteurization of milk and their relation to bacterial counts. P. S. Prickett and R. S. Breed. Aug., 1929.

572. Limitations as to sunlight requirements of hens. W. P. Wheeler. Aug., 1929.

573. Artificial manure from straw. R. C. Collison and H. J. Conn. Aug., 1929.

574. Five years' results with fertilizers in three Hudson River Valley apple orchards. H. B. Tukey and L. C. Anderson. Oct., 1929.

575. Washing fruit to remove spray residue in the Hudson Valley. E. V. Shear. Oct., 1929.

576. Studies of the black-rot or blight disease of cauliflower. E. E. Clayton. Nov., 1929.

577. Pollination of fruit trees. Richard Wellington, A. B. Stout, Olav Einset, and L. M. Van Alstyne. Nov., 1929.

578. New or noteworthy fruits, X. G. H. Howe. Dec., 1929.

579. Spray residues. L. R. Streeter and S. W. Harman. Dec., 1929.

580. Geneva, a greenhouse cucumber that develops fruit without pollination. L. R. Hawthorn and Richard Wellington. Feb., 1930.

581. Electric cooling of milk on the farm. J. C. Marquardt and A. C. Dahlberg. Feb., 1930.

582. The rosy aphid in relation to spray practices in 1929. P. J. Parrott and Hugh Glasgow. Feb., 1930.

583. Responses to light of the bud moth and leaf roller. D. L. Collins and M. W. Nixon. Feb., 1930.

584. Commercially prepared infant foods. G. J. Hucker and A. M. Hucker. Oct., 1930.

585. Straining milk on the farm. A. C. Dahlberg. Oct., 1930.

586. Combatting damping-off of tomatoes by seed treatment. J. G. Horsfall. Oct., 1930.

587. The quality of packet vegetable seed on sale in New York in 1929 and 1930. M. T. Munn, O. H. Sipple, and M. E. Woodbridge. Dec., 1930.

588. Filberts. G. L. Slate. Dec., 1930.

589. A new method for enzymic clarification of unfermented apple juice. Z. I. Kertesz. Dec., 1930.

TECHNICAL BULLETINS

148. Control measures for cucumber beetles. H. C. Huckett. Mar., 1929.

149. A preliminary study of the unicorn plants (Martyniaceae). G. P. Van Eseltine Mar., 1929.

150. The types of organisms found in spoiled tomato products. C. S. Pederson. July, 1929.

151. The fermentation of glucose, fructose and arabinose by organisms from spoiled tomato products. C. S. Pederson. July, 1929.

152. Chemical studies of grape pigments: V, The anthocyanins in Ives grapes. R. L. Shriner and R. J. Anderson. July, 1929.

153. The number and type of bacteria in commercially prepared infant foods. G. J. Hucker and A. M. Hucker. Aug., 1929.

154. The sanitary control of commercially prepared infant foods. G. J. Hucker and A. M. Hucker. Aug., 1929.

155. The Grindrod impact sterilizer. G. J. Hucker and A. M. Hucker. Aug., 1929.

156. VI, The control of bacteria that grow during pasteurization. M. W. Yale. Sept., 1929.

157. The creaming of raw and pasteurized milk. A. C. Dahlberg and J. C. Marquardt. Oct., 1929.

158. VII, The udder as a possible source of thermophilic bacteria. P. A. Hansen. Oct., 1929.

159. Cross-unfruitfulness in the apple. Olav Einset. Apr., 1930.

160. The fineness of ground sulfur sold for dusting and spraying. L. R. Streeter and W. H. Rankin. Apr., 1930.

161. A comparison of aging periods for ice cream mixes. J. C. Hening. Apr., 1930.

162. Open pollination vs. hand pollination of pollen-sterile grapes. Olav Einset. July, 1930.

163. The Eriophyidae of New York: II, The maple mites. H. E. Hodgkiss. July, 1930.

164. Variability and size relations in apple trees. R. C. Collison and J. D. Harlan. July, 1930.

165. The bacterial flora of aseptically drawn milk. W. Dorner. July, 1930.

166. Lysimeter investigations: I, Nitrogen and water relations of crops in legume and non-legume rotations. R. C. Collison and J. E. Mensching. July, 1930.

167. Studies on the Coccaceae: XVI, The genus Leuconostoc. G. J. Hucker and C. S. Pederson. July, 1930.

168. Floral changes in the fermentation of sauerkraut. C. S. Pederson. July, 1930.

169. The effect of pure culture inoculation on the quality and chemical composition of sauerkraut. C. S. Pederson. Sept., 1930.

170. Xenia and metaxenia in apples. B. R. Nebel. Dec., 1930.

171. Aphids as vectors of leafroll among sprouting potato tubers. F. C. Stewart and Hugh Glasgow. Dec., 1930. Popular edition is Circ. 119.

172. Influence of various non-nitrogenous compounds on the growth of certain bacteria in soils of low productivity. H. J. Conn and M. A. Darrow. Dec., 1930.

173. Preparation of soil profiles for exhibition and soil study. R. C. Collison and J. D. Harlan. Dec., 1930.

NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION, STATE COLLEGE STATION, RALEIGH

BULLETINS

263 Approved practices for sweet potato growers. H. B. Mann, R. F. Poole, and Robert Schmidt. Feb., 1929.

264. Causes of poultry mortality in North Carolina. R. S. Dearstyne, B. F. Kaupp, and H. S. Wilfong. Mar., 1929.

265. The nematode disease of sweet potatoes. R. F. Poole and Robert Schmidt. Apr., 1929.

266. Effects of synthetic nitrogen and concentrated fertilizers on cotton and sweet potatoes. J. J. Skinner, C. B. Williams, and H. B. Mann. May, 1929.

267. Farm income and taxation in North Carolina. G. W. Forster, H. W. Hawthorne, G. S. Klemmedson, and H. H. Wooten. June, 1929.

268. Control of oat smut by seed treatment. S. G. Lehman and G. W. Fant. Oct., 1929.

269. Farm family living among white owner and tenant operators in Wake County, 1926. W. A. Anderson. Sept., 1929.

270. Farm credit in North Carolina, its cost, risk and management. D. L. Wickens and G. W. Forster. Apr., 1930.

271. Credit problems of North Carolina cropper farmers. H. H. Wooten. May, 1930.

272. Cost of raising pigs to weaning age. E. H. Hostetler, R. E. Nance, and J. E. Foster. May, 1930.

273. A control for sweet potato wilt or stem rot. R. F. Poole. May, 1930.

274. A control for sweet potato scurf. R. F. Poole. May, 1930.

275. Migration of sons and daughters of white farmers in Wake County, 1929. W. A. Anderson and C. P. Loomis. June, 1930.

276. A coöperative marketing manual. J. G. Knapp. Dec., 1930.

TECHNICAL BULLETINS

35. A chemical control for sweet potato wilt or stem rot. R. F. Poole and J. W. Woodside. Mar., 1929.

36. Study of bacillary white diarrhea (pullorum disease). R. S. Dearstyne, B. F. Kaupp, and H. S. Wilfong. June, 1929.

37. Factors influencing living conditions of white owner and tenant farmers in Wake County, 1926. W. A. Anderson. Mar., 1930.

38. A chemical control of sweet potato scurf. R. F. Poole. May, 1930.

39. Investigations in the feeding of cottonseed meal to cattle. J. O. Halverson and F. W. Sherwood. Dec., 1930.

NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION, STATE COLLEGE STATION, FARGO

BULLETINS

225. The combined harvester-thresher in North Dakota. A. H. Benton [and others]. May, 1929.

226. Edgeley substation, report for years 1922 to 1928. O. A. Thompson. May, 1929.

227. Williston substation report, April 1, 1928, to March 31, 1929. E. G. Schollander. May, 1929.

228. Langdon substation report for 1927 and 1928. Victor Sturlaugson. May, 1929.

229. Hettinger substation report for 1928. C. H. Plath. May, 1929.

230. The northern pig, its habits, breeding, and management. J. H. Shepperd. July, 1929.

231. Varietal resistance of spring wheats to bunt. W. E. Brentzel and R. W. Smith. July, 1929.

232. Prices of North Dakota farm products. O. M. Fuller and R. E. Willard. Dec., 1929.

233. Experiment station progress, report for biennium July 1, 1927, to June 30, 1929. P. F. Trowbridge [and others]. Mar., 1930.

234. Hettinger substation, report for 1929. C. H. Plath. May, 1930.

235. Williston substation report, April 1, 1929, to March 31, 1930. E. G. Schollander. May, 1930.

236. The chemical composition of some North Dakota pasture and hay grasses. T. H. Hopper and L. L. Nesbitt. June, 1930.

237. Ranch organization and management in western North Dakota. M. B. Johnson. June, 1930.

238. Cooperative marketing of dairy products. H. G. Anderson and A. H. Benton. Sept., 1930.

239. Veal in variety. Esther Latzke and Constance Leeby. Sept., 1930.

240. Chemical composition of the soils of McHenry County. T. H. Hopper and H. L. Walster. Nov., 1930.

241. Making use of our birds. O. A. Stevens. Dec., 1930. Revision of 195.

242. Standardizing methods of roasting beef in experimental cookery. Esther Latzke. Dec., 1930.

243. North Dakota weeds. O. A. Stevens. Dec., 1930. Revision of 162.

244. Control of quack grass by tillage: 1, A progress report, Langdon tillage project; 2, general suggestions on control of quack grass. T. E. Stoa, Victor Sturlaughson, and H. F. McCollly. Dec., 1930.

245. The harvester-stacker method of harvesting grain in North Dakota. H. F. McCollly. Dec., 1930.

OHIO AGRICULTURAL EXPERIMENT STATION, WOOSTER

BULLETINS

430. The normal multiple sprouting of seed potatoes. John Bushnell. Jan., 1929.

431. Forty-seventh annual report of the Ohio agricultural experiment station for the year ended June 30, 1928. C. G. Williams [and others]. Mar., 1929.

432. Ohio potato diseases. P. E. Tilford. Mar., 1929.

433. Food consumption of farm families. Hughina McKay and M. A. Brown. Apr., 1929.

434. Fruit varieties in Ohio: IV, Crab apples. C. W. Ellenwood. Apr., 1929.

435. What does it cost to grow a bushel of apples? F. H. Ballou. May, 1929.

436. The nutritive value of blood-meal protein for growth. A. R. Winter. May, 1929.

437. Keeping chickens in confinement. D. C. Kennard and R. M. Bethke. June, 1929.

438. Losses in shipping Ohio livestock. G. F. Henning. June, 1929.

439. The culture of greenhouse chrysanthemums. W. W. Wiggin. Aug., 1929.

440. The truck and its relationship to livestock marketing in Ohio. G. F. Henning. Aug., 1929.

441. Organic food reserves in relation to the eradication of Canada thistles. F. A. Welton, V. H. Morris, and A. J. Hartzler. Sept., 1929.

442. Ohio agricultural statistics for 1928. G. S. Ray, T. F. McDonough, and R. E. Straszheim. Sept., 1929.

443. Farmers' produce markets in Ohio. C. W. Hauck. Nov., 1929.

444. The strawberry in Ohio. J. S. Shoemaker. Nov., 1929.

445. The climate of Ohio. W. H. Alexander and C. A. Patton. Dec., 1929.

446. Forty-eighth annual report of the Ohio agricultural experiment station for the year ended June 30, 1929. C. G. Williams [and others]. Feb., 1930.

447. Paper mulch for the vegetable garden, its effect on plant growth and on soil moisture, nitrates, and temperature. Roy Magruder. Mar., 1930.

448. Water soluble arsenic in spray material. H. C. Young. Mar., 1930.

449. Carnation culture. W. W. Wiggin. Mar., 1930.

450. Estimated income from the Ohio agricultural industry. V. R. Wertz. Mar., 1930.

451. Control of root-knot nematode in greenhouses. A. G. Newhall. Apr., 1930.

452. Soybeans and soybean oilmeal for pigs. W. L. Robison. May, 1930.

453. Variations in crop production costs in Medina County, Ohio. F. L. Morison. June, 1930.

454. Raspberries and blackberries in Ohio: Culture. J. S. Shoemaker.— Diseases. C. W. Bennett.— Insects. J. S. Houser. June, 1930.

455. Dicalcium phosphate as a mineral supplement for dairy cows. C. C. Hayden, C. F. Monroe, and C. H. Crawford. Aug., 1930.

456. The cost of developing an apple orchard. C. W. Ellenwood. Aug., 1930.

457. Oriental fruit moth investigations in Ohio, I. L. A. Stearns and R. B. Neiswander. Sept., 1930.

458. Some factors affecting the movement of Ohio wheat. L. G. Foster. Sept., 1930.

459. Taxation as related to the property and income of Ohio farmers. H. R. Moore. Sept., 1930.

460. Ohio agricultural statistics for 1929. G. S. Ray, A. R. Tuttle, and R. E. Straszheim. Sept., 1930.

461. The control of celery blights. J. D. Wilson and A. G. Newhall. Oct., 1930.

462. Rate of planting potatoes with some reference to sprouting habit and size of plants. John Bushnell. Oct., 1930.

463. Molasses in ration for fattening calves. Paul Gerlaugh. Oct., 1930.

464. Apple aphids in Ohio. C. R. Cutright. Oct., 1930.

465. Basal metabolism of young women. Hughina McKay. Nov., 1930.

466. Relation of nitrogen fertilizer to the firmness and composition of strawberries. J. S. Shoemaker and E. W. Greve. Nov., 1930.

467. Movement of open country population in Ohio. C. E. Lively and P. G. Beck. Nov., 1930.

468. Family living expenditures on Ohio farms. C. E. Lively. Nov., 1930.

469. The development of market milk areas in northeastern Ohio. C. G. McBride. Nov., 1930.

OKLAHOMA AGRICULTURAL EXPERIMENT STATION, STILLWATER

BULLETINS

185. The relations of economic, social and educational advancement of farmers to their membership in organizations. L. D. Howell. June, 1929.
186. Economic conditions of farmers in Oklahoma as related to membership in the Oklahoma cotton growers association. W. W. Fetrow. [1929.]
187. Biometrical analysis of upland cotton grown at Stillwater, Oklahoma. Fred Griffee, L. L. Ligon, and L. H. Brannon. June, 1929.
188. A fertilizer study on the brown soil of the Red Prairies. H. F. Murphy. June, 1929.
189. Fertility studies on Kirkland soil. H. F. Murphy. June, 1929.
190. The utilization of moisture on heavy soils of the southern Great Plains. H. H. Finnell. June, 1929.
191. Sorghum crops on the high plains of Oklahoma. H. H. Finnell. June, 1929.
192. Initial soil moisture and crop yield. H. H. Finnell. June, 1929.
193. Heavy plains soil moisture problems. H. H. Finnell. June, 1929.
194. Relation of town and country interests in Garfield County, Oklahoma. J. F. Page. Jan., 1930.
195. The economic and social aspects of mobility of Oklahoma farmers. J. T. Sanders. Aug., 1929.
196. Corn, barley and grain sorghums for fattening lambs. A. E. Darlow. Mar., 1930.
197. The relation between the economic status of the Oklahoma farm family and the farm woman's standards of management with respect to clothing. Grace Fernandes. June, 1930.
198. Credit problems of Oklahoma cotton farmers, with special reference to Garvin, Jackson, and Pittsburg Counties. A. N. Moore and J. T. Sanders. Oct., 1930.

OREGON AGRICULTURAL EXPERIMENT STATION, CORVALLIS

BULLETINS

242. The occurrence and prevention of calyx injury in apples from the Hood River Valley. Henry Hartman, Leroy Childs, and R. H. Robinson. May, 1929.
243. The relation of woolly apple aphis to perennial canker infection, with other notes on the disease. Leroy Childs. May, 1929.
244. Oregon apple prices, by variety, grade, and size, 1922-1926. R. S. Besse and M. R. Cooper. May, 1929.
245. Cost and practices in strawberry production in the Willamette Valley. C. E. Schuster and A. S. Burrier. May, 1929.
246. Alfalfa in western Oregon. H. A. Schoth and G. R. Hyslop. May, 1929.
247. Investigations relating to the handling of sweet cherries, with special reference to chemical and physiological activities during ripening. Henry Hartman and D. E. Bullis. May, 1929.
248. Cost and efficiency in producing hay in the Willamette Valley. H. E. Selby. May, 1929.
249. The chemical composition and food value of Oregon dried prunes. J. S. Jones and D. E. Bullis. June, 1929.
250. Cost of horse labor on Oregon farms. H. E. Selby, B. W. Rodenwold, and H. D. Scudder. June, 1929.
251. Cost of producing silage and kale in the Willamette Valley. H. E. Selby. June, 1929.
252. Studies of factors influencing separation of dried prunes into quality grades. E. H. Wiegand and D. E. Bullis. July, 1929.
253. Congenital loco in chicks. F. L. Knowlton. July, 1929.
254. Further investigations on the harvesting, storing and ripening of pears from Rogue River Valley. Henry Hartman, F. C. Reimer, and R. K. Norris. Aug., 1929.
255. Electric hay hoists. F. E. Price, A. W. Oliver, and E. L. Potter. Sept., 1929.
256. Use of time by Oregon farm homemakers. Maud Wilson. Nov., 1929.
257. Trends of tax levies in Oregon with emphasis upon rural and city real properties. W. H. Dreesen. Nov., 1929.
258. The butter industry of Oregon, a study of factors relating to the quality of butter. E. S. Larrabee and Gustav Wilster. Dec., 1929.
259. Sprays, their preparation and use. R. H. Robinson. Feb., 1930.
260. Marketing Willamette Valley wools through the Pacific cooperative wool growers. E. B. Mittelman. Feb., 1930.

261. Willamette Valley wools in relation to local consumption. E. B. Mittelman. Feb., 1930.
262. Electric brooders. F. E. Price, A. G. Lunn, and F. E. Fox. Apr., 1930.
263. The market situation and outlook for the Oregon canned fresh prune. M. N. Nelson and W. H. Belden. May, 1930.
264. Irrigated pastures for dairy cattle. I. R. Jones and P. M. Brandt. May, 1930.
265. Lamb marketing investigations in western Oregon. H. A. Lindgren and E. L. Potter. June, 1930.
266. Studies in fascioliasis in Oregon sheep and goats. J. N. Shaw and B. T. Simms. June, 1930.
267. Cost and efficiency in pear production in the Rogue River Valley. R. S. Besse, W. S. Brown, and L. P. Wilcox. June, 1930.
268. Mechanical refrigeration of milk in a tank type refrigerator. F. E. Price, C. J. Hurd, and G. V. Copson. June, 1930.
269. Fattening pigs for market. A. W. Oliver and E. L. Potter. Nov., 1930.
270. Progress report of the irrigated eighty-acre demonstration farm unit of the Harney branch experiment station 1927-1930. Obil Shattuck and R. E. Hutchison. Oct., 1930.
271. Deferred breeding of beef cows. Robert Withycombe, E. L. Potter, and F. M. Edwards. Nov., 1930.
272. The comparative value of kale and corn silage for milk production. I. R. Jones and P. M. Brandt. Dec., 1930.
273. Fowl-pox control. W. T. Johnson. Dec., 1930.

PENNSYLVANIA AGRICULTURAL EXPERIMENT STATION, STATE COLLEGE

BULLETINS

236. Black locust in Pennsylvania. A. G. McIntyre. Feb., 1929.
237. A farm machinery survey of selected districts in Pennsylvania. Summarized by H. B. Josephson, W. R. Humphries, and L. M. Church. Mar., 1929.
238. Farm power and labor. H. B. Josephson and R. U. Blasingame. Apr., 1929.
239. (Technical bulletin.) The rusts of Pennsylvania. F. D. Kern, H. W. Thurston, Jr., C. R. Orton, and J. F. Adams. May, 1929.
240. Results of tobacco experiments in Pennsylvania, 1922 to 1927. Otto Olson and D. E. Haley. Apr., 1929.
241. The insulation of fruit and vegetable storages. R. D. Anthony and F. G. Hechler. June, 1929.
242. A study of the business practices of farmers' local cooperative purchasing associations in Pennsylvania. J. K. Stern. June, 1929.
243. 42nd annual report for the fiscal year ending June 30, 1929. R. L. Watts [and others]. July, 1929.
244. Containers for plant growing. J. E. Knott and C. D. Jeffries. Aug., 1929.
245. The consumption of dairy products by 1,370 families in Philadelphia. F. F. Lininger and Hutzel Metzger. Mar., 1930.
246. Managing confined fowls. H. C. Knandel, E. W. Callenbach, and P. H. Margolf. Mar., 1930.
247. (Technical.) The effect of aging the mix on the freezing time, overrun, and quality of ice cream. C. D. Dahle, J. I. Keith, and A. D. McCullough. Mar., 1930.
248. The effect of selection in the tomato. C. E. Myers and M. T. Lewis. Jan., 1930.
249. Sulphate of ammonia and nitrate of soda in a sod orchard. R. D. Anthony. Mar., 1930.
250. Feed consumption and costs in raising turkeys. E. M. Funk and P. H. Margolf. Mar., 1930.
251. A price plan for selling milk by collective bargaining organizations. R. W. Bartlett. May, 1930.
252. A field test of different sources of phosphorus. C. F. Noll, F. D. Gardner, and C. J. Irvin. May, 1930.
253. Varieties of apples for Pennsylvania. F. N. Fagan and R. H. Sudds. Apr., 1930.
254. Pasture crops for swine. M. A. McCarty and M. F. Grimes. May, 1930.
255. Producing early lambs. W. L. Henning, P. T. Ziegler, and P. C. MacKenzie. May, 1930. Revision of 209.
256. Membership problems in a milk marketing organization. J. K. Stern. May, 1930.
257. Land utilization and farm management in Wyoming County. P. I. Wrigley. May, 1930.
258. 43rd annual report for the fiscal year ending June 30, 1930. R. L. Watts [and others]. July, 1930.

259. (Technical.) A review of research on the control of wireworms. C. A. Thomas. July, 1930.

260. Growing and marketing grapes in Erie County, Pennsylvania. J. T. Vandenburg, Jr., and G. P. Scoville. Aug., 1930.

UNNUMBERED PUBLICATION

Progress report on the use of small electric motors for: 1, Cutting ensilage; 2, sawing wood; 3, grinding feed. H. B. Josephson and R. U. Blasingame. May, 1929.

PORTO RICO AGRICULTURAL EXPERIMENT STATION, MAYAGUEZ

BULLETIN

33. Citrus culture in Porto Rico. H. C. Henricksen. Feb., 1930. Also Spanish edition.

RHODE ISLAND AGRICULTURAL EXPERIMENT STATION, KINGSTON

BULLETINS

217. The persistence of certain lawn grasses as affected by fertilization and competition. E. S. Garner and S. C. Damon. July, 1929.

218. Studies on the inheritance of egg-weight: II, The effect of selection on egg-weight. N. F. Waters and J. C. Weldin. July, 1929.

219. Practices on Rhode Island dairy farms. J. L. Tennant. July, 1929.

220. Preferences and practices in buying vegetables in Providence, Rhode Island. R. B. Corbett. Sept., 1929.

221. Time factors in the business of homemaking in rural Rhode Island. Margaret Whitemore and Berniece Neil. Sept., 1929.

222. The production of gas by *Salmonella pullorum*, II. J. C. Weldin and H. J. Weaver. Sept., 1929.

223. Costs of cooling milk on farms. R. B. Corbett. May, 1930.

224. Fertilizer and crop rotation experiments. T. E. Odland, S. C. Damon, and J. L. Tennant. Aug., 1930.

225. The amount of manure necessary for vegetable growing, II. F. K. Crandall and T. E. Odland. Nov., 1930.

226. Some phases of apple growing in Rhode Island. A. E. Stene. Dec., 1930.

SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION, CLEMSON COLLEGE

BULLETINS

254. Corn silage versus sweet sorghum silage for milk production. J. P. LaMaster and K. S. Morrow. Jan., 1929.

255. Ground hay for milk production. K. S. Morrow and J. P. LaMaster. Jan., 1929.

256. House fly fumigation experiments with calcium cyanide. C. O. Eddy. Apr., 1929.

257. The maize billbug in South Carolina. O. L. Cartwright. May, 1929.

258. The Mexican bean beetle, 1927-1928. C. O. Eddy and W. H. Clarke. June, 1929.

259. Analyses of commercial fertilizers. R. N. Brackett and D. H. Henry. Aug., 1929.

260. Children of pre-school age in selected areas of South Carolina. M. E. Frayser. Sept., 1929.

261. Fruiting habit of the cotton plant. T. S. Buie. Oct., 1929.

262. Fertilizer rotation experiments at the Pee Dee station. T. S. Buie, R. E. Currin, E. D. Kyzer, and J. D. Warner. Nov., 1929.

263. The use of leisure in selected rural areas of South Carolina. M. E. Frayser. Mar. 1930.

264. Piedmont farm business studies. W. C. Jensen and B. A. Russell. Mar., 1930.

265. The bean leaf beetle. C. O. Eddy and W. C. Nettles. May, 1930.

266. The rice weevil and associated insects in relation to shuck lengths and corn varieties. O. L. Cartwright. June, 1930.

267. Analyses of commercial fertilizers. R. N. Brackett and D. H. Henry. Aug., 1930.

268. The diet of school children in relation to their health. M. E. Frayser and A. M. Moser. Sept., 1930.

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION, BROOKINGS

BULLETINS

236. Self feeders in dairy calf feeding. T. M. Olson. Mar., 1929.

237. Experiments in plant heredity. N. E. Hansen. Apr., 1929.

238. Types of farming in South Dakota. R. H. Rogers and F. F. Elliott. June, 1929.

239. Costs and uses for electricity on South Dakota farms. R. L. Patty [and others]. June, 1929.

240. Hardy roses for South Dakota. N. E. Hansen. June, 1929.

241. Cost of electricity for the home electric refrigerator. R. L. Patty. June, 1929.

242. Results of poultry feeding experiments. G. L. Stevenson. June, 1929.

243. Marketing of poultry products. G. L. Stevenson. June, 1929.

244. Progress report on the use of the combine in South Dakota. Gabriel Lundy, K. H. Klages, and J. F. Goss. Sept., 1929.

245. The possibility of utilizing selfed strains in practical corn improvement. A. N. Hume. Feb., 1930.

246. The shade, windbreak and timber trees of South Dakota. N. E. Hansen. Mar., 1930.

247. The use of time by South Dakota farm homemakers. G. E. Wasson. Mar., 1930.

248. A study of women's coats. A. O. Halgrim. Mar., 1930.

249. Economic adjustments on farms in southeastern South Dakota. R. H. Rogers. Mar., 1930.

250. The high school education of farm boys and girls in South Dakota. W. F. Kumlien. Mar., 1930.

251. Combining grain in weed-free fields, progress report on combine project for 1929. D. E. Wiant and R. L. Patty. Apr., 1930.

252. Value of grinding grains and roughages for livestock. J. W. Wilson, R. L. Patty, Turner Wright, and T. M. Olson. May, 1930.

253. A decade of crop yields from Vivian farm. A. N. Hume. July, 1930.

254. Evergreens in South Dakota. N. E. Hansen. Oct., 1930.

255. Cattle ranch organization and management in western South Dakota. M. B. Johnson. Nov., 1930.

256. Barley production in South Dakota. K. H. Klages. Dec., 1930.

TENNESSEE AGRICULTURAL EXPERIMENT STATION, KNOXVILLE

BULLETINS

140. Cryolite and barium fluosilicate, their use as insecticides. Simon Marcovitch and W. W. Stanley. Nov., 1929.

141. The comparative values of different phosphates. C. A. Mooers. Nov., 1929.

142. The effects of various legumes on the yield of corn. C. A. Mooers. Feb., 1930.

143. Sodium acid sulphate as a disinfectant against *Salmonella pullorum* in poultry-yard soils, a preliminary study. P. W. Allen and Moses Jacob. Sept., 1930.

144. A comparison of normal corn silage with grainless corn silage for finishing beef cattle. Moses Jacob and H. R. Duncan. Oct., 1930.

TEXAS AGRICULTURAL EXPERIMENT STATION, COLLEGE STATION

BULLETINS

393. Plants susceptible or resistant to cotton root rot and their relation to control. J. J. Taubenhaus, B. F. Dana, and S. E. Wolff. Feb., 1929.

394. Boll weevil control by airplane dusting. F. L. Thomas, W. L. Owen, jr., J. C. Gaines, jr., and Franklin Sherman, III. Apr., 1929.

395. Systems of farming for the Black Waxy Prairie Belt of Texas. L. P. Gabbard, J. B. Hutson, and T. L. Gaston, jr. May, 1929.

396. Sudan grass for hay, seed, and pasture. R. E. Karper, J. R. Quinby, and D. L. Jones. Apr., 1929.

397. Corn varieties in Texas, their regional and seasonal adaptation. P. C. Mangelsdorf. June, 1929.

398. Fertilizers for rice in Texas. E. B. Reynolds and R. H. Wyche. June, 1929.

399. Varieties of cotton for the Blackland region of central Texas. D. T. Killough, Henry Dunlavy, and H. E. Rea. July, 1929.

400. The basicity of Texas soils. G. S. Fraps and E. C. Carlyle. Dec., 1929.

401. The cotton-square borer. H. J. Reinhard. Sept., 1929.

402. Supplementary energy-production coefficients of American feeding stuffs fed ruminants. G. S. Fraps. Oct., 1929.

403. Commercial fertilizers in 1928-29 and their uses. G. S. Fraps and S. E. Asbury. Oct., 1929.

404. Commercial feeding stuffs, from September 1, 1928, to August 31, 1929. F. D. Fuller. Dec., 1929.

405. Karakul sheep. J. L. Lush, J. M. Jones, and R. E. Dickson. Feb., 1930.

406. Cotton variety experiments at Substation No. 2, Troup. W. S. Hotchkiss and P. R. Johnson. Feb., 1930.

407. The inheritance of cryptorchidism in goats. J. L. Lush, J. M. Jones, and W. H. Dameron. Feb., 1930.

408. The effect of sulphur on yield of certain crops. E. B. Reynolds. Feb., 1930.

409. Normal growth of range cattle. J. L. Lush, J. M. Jones, W. H. Dameron, and O. L. Carpenter. Mar., 1930.

410. Cottonseed meal as a feed for hogs. Fred Hale. Mar., 1930.

411. Factors influencing runoff and soil erosion. A. B. Conner, R. E. Dickson, and Daniels Scoates. Mar., 1930.

412. Occurrence of nitrites in soils. G. S. Fraps and A. J. Sterges. July, 1930.

413. Planning the ranch for greater profit, a study of physical and economic factors affecting organization and management of ranches in the Edwards Plateau grazing area. L. P. Gabbard, C. A. Bonnen, and J. N. Tate. July, 1930.

414. Possibilities of sulphur as a soil amendment. G. S. Fraps. Aug., 1930.

415. Commercial fertilizers in 1929-1930 and their uses. G. S. Fraps and S. E. Asbury. Sept., 1930.

416. Methods of ginning in relation to the grade and staple of cotton. D. T. Killough and G. T. McNess. Nov., 1930.

417. Varieties of cotton for north Texas. P. B. Dunkle. Nov., 1930.

418. Digestibility by sheep of the constituents of the nitrogen-free extract of feeds. G. S. Fraps. Nov., 1930.

419. Citrus production in the lower Rio Grande Valley of Texas. H. P. Traub and W. H. Friend. Dec., 1930.

420. Commercial feeding stuffs, from September 1, 1929, to August 31, 1930. F. D. Fuller and S. D. Pearce. Dec., 1930.

UTAH AGRICULTURAL EXPERIMENT STATION, LOGAN

BULLETINS

209. Biennial report of the director, July 1, 1926-June 30, 1928. P. V. Cardon [and others]. Feb., 1929.

210. The mineral content of grains. J. E. Greaves and C. T. Hirst. May, 1929.

211. Silage corn varieties for Utah. George Stewart and A. L. Wilson. June, 1929.

212. (Technical.) Studies on the morphology of the beet leafhopper, *Eutettix tenellus* (Baker). G. F. Knowlton. July, 1929.

213. Food habits of Utah farm families. A. P. Brown. July, 1929.

214. An economic survey of the "Dixie" section, Washington County, Utah, with special reference to production and marketing of truck crops and fruit. W. P. Thomas. Jan., 1930.

215. Cost reduction in dry-farming in Utah. P. V. Cardon. Mar., 1930.

216. Notes on miscellaneous insects of Utah. H. J. Pack. Apr., 1930. Compiled by G. F. Knowlton.

217. Prices of farm products in Utah. W. P. Thomas. June, 1930.

218. The alfalfa-seed chalcis-fly in Utah, 1926-29, inclusive. C. J. Sorenson. June, 1930.

219. Twenty-eight years of irrigation experiments near Logan, Utah, 1902-29, inclusive. D. W. Pittman and George Stewart. June, 1930.

220. Biennial report of Utah agricultural experiment station, July 1, 1928, to June 30, 1930. P. V. Cardon. July, 1930.

221. Snakes of Utah. H. J. Pack. Aug., 1930. Compiled by G. F. Knowlton.

222. A quarter century of dry-farm experiments at Nephi, Utah. A. F. Bracken and George Stewart. Nov., 1930.

223. Feeding value of alfalfa hay treated with calcium arsenate. H. J. Frederick. Dec., 1930.

VERMONT AGRICULTURAL EXPERIMENT STATION, BURLINGTON

BULLETINS

292. Cost and profit in the sugar orchard. J. A. Hitchcock. Feb., 1929. Summary of Buls. 285-286.

293. Commercial feeding stuffs. L. S. Walker and E. F. Boyce. Apr., 1929.

294. Comparative study of data on farm household expenditures obtained by household accounts and by a survey. Marianne Muse and C. P. Brooks. June, 1929.

295. Yield and composition of pasture grass. H. B. Ellenberger, J. A. Newlander, and C. H. Jones. June, 1929.

296. The role of magnesium in the aging of plants. B. F. Lutman and N. L. Walbridge. June, 1929.

297. The value of scabby potatoes. B. F. Lutman. June, 1929.

298. Studies in tolerance of New England forest trees: IX, Rainfall and width of annual rings in Vermont forests. G. P. Burns. June, 1929.

299. The keeping quality of stored dairy products: I, Metallic flavor in frozen cream. H. B. Ellenberger and H. L. White.— II, Comparative keeping quality of cream, butter and butter oil. J. A. Newlander and H. B. Ellenberger. July, 1929.

300. The production of high quality milk: I, Cooling, the electric brine cooler with cold-air storage versus ice and water. H. B. Ellenberger. July, 1929.

301. Commercial fertilizers. L. S. Walker and E. F. Boyce. Aug., 1929.

302. Forty-second annual report, 1928-1929. J. L. Hills. Aug., 1929.

303. Milk receiving station operation in Vermont. O. M. Camburn. Nov., 1929.

304. Studies in Vermont dairy farming: V, Cabot-Marshfield area. E. W. Bell. Sept., 1929.

305. Commercial feeding stuffs. L. S. Walker and E. F. Boyce. Oct., 1929.

306. Agricultural seed. A. S. Lutman. Oct., 1929.

307. Studies in Vermont dairy farming: VI, The position of northern Vermont among American dairy farming regions. J. L. Hills. Nov., 1929.

308. Apple thinning experiments: Cause relations of small apples; size increases of large and small apples; quarter century study of a variety orchard. M. B. Cummings, E. W. Jenkins, and R. G. Dunning. June, 1930.

309. Commercial feeding stuffs. L. S. Walker and E. F. Boyce. July, 1930.

310. Studies in tolerance of New England forest trees: X, The change in the environmental factors caused by thinnings in pine plantations. W. R. Adams, Jr. May, 1930.

311. A study of natural reproduction in Vermont forests: I, The effect of thinning on diameter growth. G. P. Burns and W. E. White. July, 1930.

312. Preparing samples of milk for the methylene blue reduction test. H. B. Ellenberger and R. I. Moody. June, 1930.

313. The production of high quality milk: II, The influence of delayed cooling upon the quality of milk. J. M. Frayer. June, 1930.

314. Variability, accuracy and adaptability of some common methods of determining the keeping quality of milk: I, Methods of comparison. A. H. Robertson and J. M. Frayer. June, 1930.

315. Variability, accuracy and adaptability of some common methods of determining the keeping quality of milk: II, Observations in sextuplicate. A. H. Robertson, R. I. Moody, and J. M. Frayer. June, 1930.

316. Variability, accuracy and adaptability of some common methods of determining the keeping quality of milk: III, Observations at different temperatures and at successive intervals on the same sample. A. H. Robertson and J. M. Frayer. June, 1930.

317. Variability, accuracy and adaptability of some common methods of determining the keeping quality of milk: IV, Correlation studies. A. H. Robertson and J. M. Frayer. June, 1930.

318. Variability, accuracy and adaptability of some common methods of determining the keeping quality of milk: V, The broader aspects of variability. A. H. Robertson and J. M. Frayer. June, 1930.

319. Forty-third annual report, 1929-1930. J. L. Hills. July, 1930.

320. Commercial fertilizers. L. S. Walker and E. F. Boyce. July, 1930.

321. Commercial feeding stuffs. L. S. Walker and E. F. Boyce. Nov., 1930.

322. Agricultural seed. A. S. Lutman.— Fifteen years of agricultural seed inspection. J. L. Hills. Nov., 1930.

323. A half century of fertilizer control in Vermont. J. L. Hills. Dec., 1930.

324. A third of a century of feeding stuff inspection. J. L. Hills. Dec., 1930.

325. Studies in North American violets: II, The cytology of some sterile F₁ violet hybrids. Ronald Bamford and Alexander Gershoy. Dec., 1930.

VIRGINIA AGRICULTURAL EXPERIMENT STATION, BLACKSBURG
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265. Bacillary white diarrhea, pullorum infection of the domestic fowl. R. A. Runnels. Mar., 1929.

266. The adjustment of agricultural production to meet home market demands in the Clifton Forge-Covington trade area. J. J. Vernon and T. D. Johnson.— The place of timber growing in the development of the Clifton Forge-Covington trade area. Wilbur O'Byrne. Apr., 1929.

267. The rôle of the church in rural community life in Virginia. C. H. Hamilton and W. E. Garnett. June, 1929.

268. Taxes on farm and urban real estate in Virginia. R. A. Ballinger and Whitney Coombs. Sept., 1929.

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270. Life history of the oriental fruit moth in Virginia. LeRoy Cagle. May, 1930.

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273. The negro church in rural Virginia. C. H. Hamilton and J. M. Ellison. June, 1930.

274. Young people's organizations in relation to rural life in Virginia, with special reference to 4-H clubs: Section I, The 4-H club system; II, the place of 4-H club work in the State's educational system; III, summary and conclusions. W. E. Garnett.— IV, Effects of club work on school work. F. H. Stubbs. June, 1930.

275. Marketing fluid milk in four Virginia cities. J. L. Maxton and C. C. Taylor. Dec., 1930.

276. Marketing woodland products in Virginia. J. E. Lodewick. Dec., 1930.

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37. Historical study of prices received by producers of farm products in Virginia, 1801-1927. A. G. Peterson. Mar., 1929.

38. Methods of balancing rations for dairy cows in digestibility trials with corn meal. C. W. Holdaway, W. B. Ellett, and J. F. Eheart. May, 1929.

39. Studies on the ox warble flies, *Hypoderma lineatum* and *Hypoderma bovis*, with special reference to economic importance and control. L. I. Case. Sept., 1929.

40. A study of hibernation of the corn earworm in Virginia. W. J. Phillips and G. W. Barber. Nov., 1929.

41. Feeding Hevea rubber seed meal for milk production. W. B. Ellett, C. W. Holdaway, J. F. Eheart, and L. D. Lasting. Apr., 1930.

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234. The present use of work time of farm homemakers. I. F. Arnquist and E. H. Roberts. July, 1929.

235. Eradicating the bindweed with sodium chlorate. E. G. Schafer, O. C. Lee, and J. R. Neller. June, 1929.

236. Collar rot of apple trees. J. R. Magness. Oct., 1929.

237. Thirty-ninth annual report for the fiscal year ended June 30, 1929. E. C. Johnson [and others]. Dec., 1929.

238. Economic aspects of the Washington fruit industry: Apricots, cherries, peaches, and pears. N. W. Johnson. Apr., 1930.

239. Economic aspects of apple production in Washington. N. W. Johnson. Apr., 1930.

240. The production of cereals under irrigation in Washington. H. P. Singleton. June, 1930.

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243. Effect of calcium and phosphorus content of various soil series in western Washington upon the calcium and phosphorus composition of oats, red clover and white clover. H. F. Holtz. June, 1930.

244. Farming systems for eastern Washington and northern Idaho. George Severance, Byron Hunter, and Paul Eke. July, 1930. Also published as Idaho Bul. 173.

245. Fortieth annual report for the fiscal year ended June 30, 1930. E. C. Johnson [and others]. Dec., 1930.

POPULAR BULLETINS

145. Units of measurement and the application of irrigation water. C. C. Wright. June, 1929.

146. Washington chick rations. J. S. Carver, W. D. Buchanan, and M. W. Miller. Nov., 1929. Also published as West. Wash. Bul. 15-W.

147. The farm shop. L. J. Smith and H. L. Garver. June, 1930.

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11-W. Grain crops in western Washington. M. E. McCollam. Jan., 1929.

12-W. Control of fowl pox. C. E. Sawyer. Apr., 1929.

13-W. Recommended dates for application of standard hot water treatment to hardy narcissus. H. D. Locklin and G. A. Newton. July, 1929.

14-W. Annual report of the Western Washington experiment station for the fiscal year ending March 31, 1929. J. W. Kalkus [and others]. Oct., 1929.

15-W. Washington chick rations. M. W. Miller, W. D. Buchanan, and J. S. Carver. Jan., 1930. Also published as Wash. Pop. Bul. 146.

16-W. Berry cultivation in western Washington. H. D. Locklin. Apr., 1930.

17-W. Pullorum disease (bacillary white diarrhea). C. E. Sawyer and C. M. Hamilton. July, 1930.

18-W. Annual report of the Western Washington experiment station for the fiscal year ending March 31, 1930. J. W. Kalkus [and others]. Oct., 1930.

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222. Varieties of fruits for West Virginia: I, The tree fruits. H. E. Knowlton. Mar., 1929.

223. A study of the time factor in egg production. Horace Atwood. Oct., 1929.

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227. Soybeans for silage and for hay. T. E. Odland. Feb., 1930.

228. Adjusting agricultural production and distribution in the Wheeling area to meet home market demands. W. W. Armentrout. Feb., 1930.

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230. Growth studies with swine. J. H. Longwell, H. O. Henderson, and W. M. Insko, jr. Mar., 1930.

231. The effect of feeding different amounts of calcium and phosphorus upon the growth and development of dairy animals. H. O. Henderson and C. E. Weakley, jr. Mar., 1930.

232. Wintering dairy heifers by means of the self-feeder. H. O. Henderson and E. L. Anthony. Apr., 1930.

233. The relationship between the number and weight of eggs and body weight of Leghorn fowls during the first three years of production. Horace Atwood and T. B. Clark. Apr., 1930.

234. Standardization of cherry and blackberry preserves and blackberry jelly. Hazel Cameron and R. B. Burns. June, 1930.

235. Pasture experiments. T. E. Odland, C. V. Wilson, H. O. Henderson, and E. P. Deatrick. June, 1930.

236. Physiological investigations on the resistance of peach buds to freezing temperatures. H. L. Crane. Aug., 1930.

237. Varietal tests with wheat, oats, barley, rye, and buckwheat. M. M. Hoover and R. J. Garber. Oct., 1930.

238. The West Virginia community packing house at Inwood as a state service to apple growing. F. J. Schneiderhan. Nov., 1930.

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404. Raising the dairy calf. I. W. Rupel. Jan., 1929.

405. What's new in farm science: Annual report of the director, 1927-1928. H. L. Russell [and others]. Feb., 1929.

406. Use and taxation of land in Lincoln County, Wisconsin. B. H. Hibbard, W. A. Hartman, and W. N. Sparhawk. Jan., 1929.

407. The farm timberlot. F. G. Wilson. Mar., 1929.

408. Field peas in Wisconsin. E. J. Delwiche. Mar., 1929.

409. Anemia in suckling pigs. E. B. Hart, C. A. Elvehjem, Harry Steenbock, Gustav Bohstedt, and J. M. Fargo. Sept., 1929.

410. New science for an old art: Annual report of the director, 1928-1929. H. L. Russell [and others]. Feb., 1930.

411. Use exhaust steam in dairy plants. M. J. Buck and H. C. Jackson. Jan., 1930.

412. Rotation and the tobacco crop. James Johnson and W. B. Ogden. Jan., 1930.

413. Fertilizers for tobacco. James Johnson and W. B. Ogden. Feb., 1930.

414. Permanent pastures can be improved. C. B. Mortimer and Griffith Richards. Feb., 1930.

415. Sour cherry fruiting. R. H. Roberts. May, 1930.

416. Success with sandy soils. A. R. Albert and A. R. Whitson. Apr., 1930.

417. Cut the cost of feeding cows. E. B. Hart and G. C. Humphrey. Sept., 1930.

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87. The classification of certain virus diseases of the potato. James Johnson. Jan., 1929.

88. How fast do northern hardwoods grow? Raphael Zon and H. F. Scholz. Jan., 1929.

89. Drainage of swamps and forest growth. Raphael Zon and J. L. Averell. Mar., 1929.

90. Yield of jack pine in the Lake States. A. E. Wackerman, Raphael Zon, and F. G. Wilson. Mar., 1929.

91. Forest fire hazard, as affected by weather conditions, forest type and density of cover. J. A. Mitchell and Raphael Zon. Apr., 1929.

92. Mechanics of digestion of pollen by the adult honey bee and the relation of undigested parts to dysentery of bees. Warren Whitcomb, jr., and H. F. Wilson. May, 1929.

93. The known predaceous and parasitic enemies of the pea aphid in North America. C. L. Fluke. June, 1929.

94. Some stock and scion observations on apple trees. R. H. Roberts. June, 1929.

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97. Inheritance of Fusarium wilt resistance in canning peas. B. L. Wade. Dec., 1929.

98. Second-growth white pine in Wisconsin, its growth, yield, and commercial possibilities. S. R. Gevorkiantz and Raphael Zon. June, 1930.

99. Soil erosion, a local and national problem. C. G. Bates and O. R. Zeasman. Aug., 1930.

100. American cheese factories in Wisconsin. H. H. Bakken. Aug., 1930.

101. Origin and nature of rogues in canning peas. E. J. Renard. Nov., 1930.

102. Chopping hay for livestock and steaming or pre-digesting feeds. Gustav Bohstedt, B. H. Roche, I. W. Rupel, J. G. Fuller, and F. W. Duffee. Dec., 1930.

103. The foreign type cheese industry in Wisconsin. W. B. Silcox and H. H. Bakken. Dec., 1930.

104. The germination of tobacco seed. James Johnson, H. F. Murwin, and W. B. Ogden. Dec., 1930.

105. The relation of nitrate nitrogen and nitrification to the growth of tobacco following timothy. R. P. Thomas. Dec., 1930.

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161. Methods of winter wheat tillage. A. L. Nelson. Jan., 1929.

162. Making bread from Wyoming flour. E. J. McKittrick and E. G. Grundmeier. Feb., 1929.

163. Results with tree planting at the Sheridan field station. R. S. Towle. Mar., 1929.

164. Barley production and varieties for Wyoming. Glen Hartman and A. F. Vass. Apr., 1929.
165. Dietary studies of farm families in Albany and Lincoln Counties, Wyoming. E. J. McKittrick. May, 1929.
166. Sterilization of brood combs infected with American foulbrood. C. H. Gilbert. June, 1929.
167. Field studies of the physical ecology of the alfalfa weevil. H. L. Sweetman. Sept., 1929.
168. Soil problems of the Wheatland project. T. J. Dunnewald.— Available phosphorus determination of soils (blue colorimetric method). Emil Truog. Sept., 1929.
169. Artificial incubation at high altitudes. F. J. Kohn. Jan., 1930.
170. Oat production and varieties for Wyoming. A. F. Vass and Glen Hartman. Feb., 1930.
171. Varietal tests with wheat at the Sheridan field station. R. S. Towle. Mar., 1930.
172. Studies on roup vaccination in chickens. Cecil Elder, F. J. Kohn, and A. M. Lee. June, 1930.
173. Methods of spring wheat tillage. A. L. Nelson. July, 1930.
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175. The metabolism of the honeybee colony during winter. C. L. Corkins. Nov., 1930.

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